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# Centennial Mountains Wilderness Study/Environmental Impact Statement

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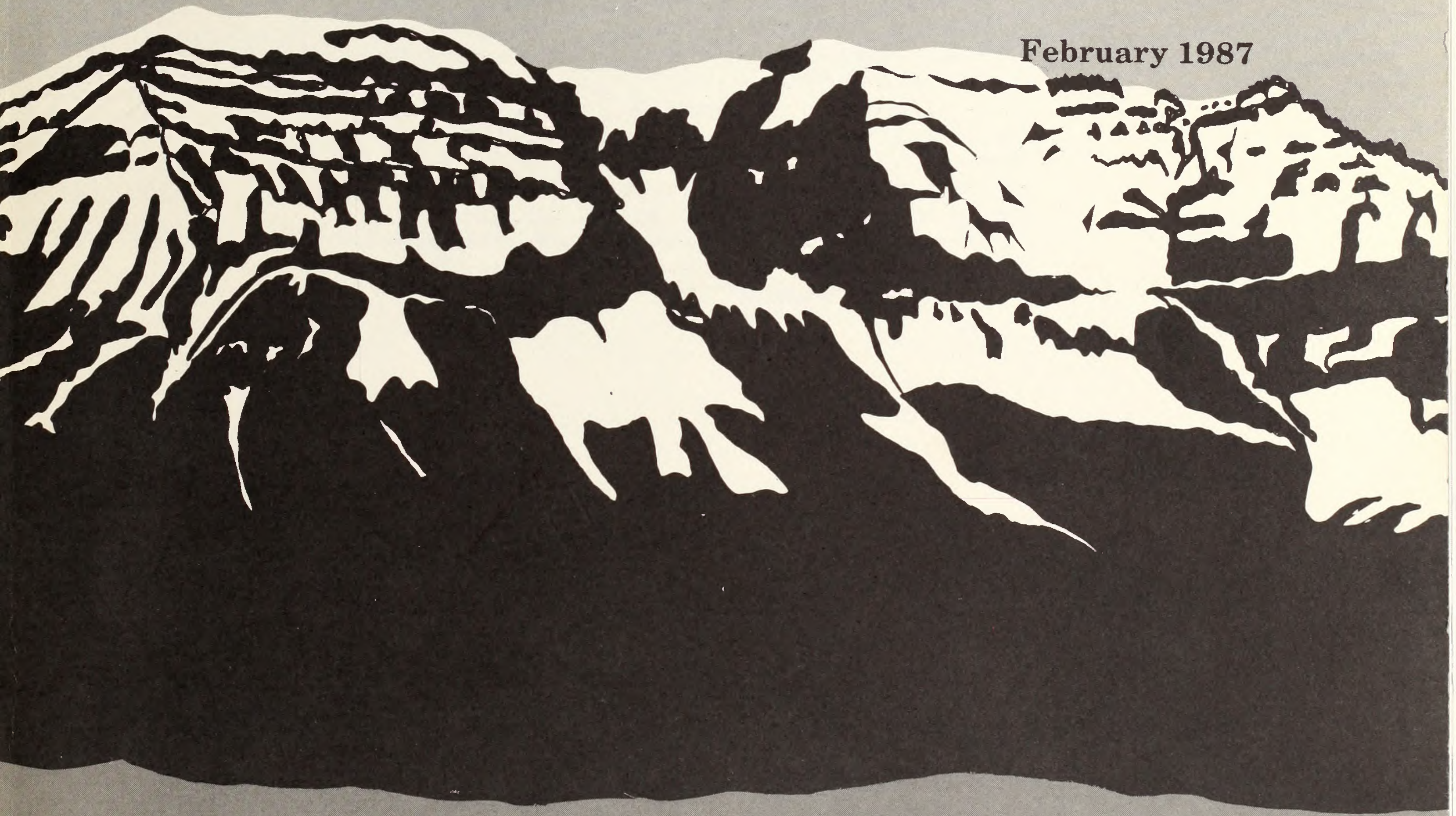

February 1987

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Department of the Interior
Bureau of Land Management

**BLM-MT-ES-87-004-4332**

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

IN REPLY REFER TO:

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
MONTANA STATE OFFICE
222 North 32nd Street
P.O. Box 36800
Billings, Montana 59107-6800

Dear Reader:

The Centennial Mountains Wilderness Draft Environmental Impact Statement is presented for your review and comment. This document considers the environmental impacts of eight different alternatives ranging from wilderness designation to nondesignation. The study area covers 72,885 acres with 26,371 acres managed by the Bureau of Land Management, 4,474 acres managed by the Beaverhead National Forest, and 42,040 acres managed by the Targhee National Forest. The study area lies on the border between Montana and Idaho on the Continental Divide. The proposed action and alternatives are described in Chapter 2 and the impacts of all alternatives including the proposed are disclosed in Chapter 4.

**Written comments will be accepted through June 19, 1987. The public comments will be incorporated into the final environmental impact statement. Comments should be sent to the District Manager, Butte District Office of the BLM, P.O. Box 3388, Butte, Montana, 59702.**

**Formal hearings for public comments are scheduled for:**

**Helena, Montana; Tuesday, June 2, 1987; Jorgenson's Motel, 1714 11th Avenue at 7:00-10:00 pm.**

**Dillon, Montana; Wednesday, June 3, 1987; St. Rose Center, 202 S. Atlantic at 7:00-10:00 pm.**

**Idaho Falls, Idaho; Thursday, June 4, 1987; Eagle Rock Junior High School, 2020 Pancheri Drive at 7:00-10:00 pm.**

Recommendations on suitability of the study area for wilderness designation will be sent to Congress along with the final environmental impact statement. Congress will make the final decision on wilderness designation for the Centennial Mountains.

The Chief of the Forest Service and the BLM Director are the responsible officials for any legislation that the agencies may propose to Congress as a result of this study.

Sincerely yours,

Dean Stepanek
Montana State Director of BLM

Ronald Prichard
Forest Supervisor of Beaverhead National Forest

John E. B
Forest Supervisor of Targhee National Forest

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# Centennial Mountains Wilderness Suitability Study/ MFP Amendment/Environmental Impact Statement

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February 1987

prepared by

Bureau of Land Management
Department of the Interior

Forest Service
Department of Agriculture

Dean Stepanek
State Director
Montana State Office

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# ABSTRACT

U.S. Department of Interior

Bureau of Land Management

U.S. Department of Agriculture

Forest Service

## Draft

February 1987

## Centennial Mountains Environmental Impact Statement

The wilderness environmental impact statement and study considers the suitability of the 72,885-acre Centennial Mountains Study Area for designation as wilderness. A total of 26,371 acres are managed by the Bureau of Land Management as the Centennial Primitive Area. In addition, 4,474 acres are managed by the Beaverhead National Forest and 42,040 acres by the Targhee National Forest as the Mount Jefferson Roadless Area. The study area is located on either side of the Continental Divide on the border between Montana and Idaho.

This study recommends that 26,248 acres be designated as wilderness and included in the National Wilderness Preservation System. The recommended area includes 21,774 acres of the Centennial Primitive Area managed by the BLM and 4,474 acres of the Mount Jefferson Roadless Area managed by the Beaverhead National Forest. The remaining 46,637 acres not recommended for wilderness will be managed as described in the Dillon Resource Area Management Framework Plan and the Land Management Plan for the Targhee National Forest.

For further information, contact Phil Gezon, Project Manager, Butte District Office, Bureau of Land Management, P.O. Box 3388, Butte, Montana 59702 or phone (406) 494-5059.

# SUMMARY

## INTRODUCTION

The Draft Environmental Impact Statement for the Centennial Mountains Wilderness Study is a joint effort of the Butte District of the Bureau of Land Management, the Targhee National Forest, and the Beaverhead National Forest. It is prepared in accordance with the National Environmental Policy Act and the regulations in 40 CFR, Parts 1500-1508.

## SETTING

The Centennial Mountains lie on the Idaho-Montana border 75 miles north of Idaho Falls, Idaho. The study area covers 72,885 acres in Clark and Fremont counties in Idaho and Beaverhead County in Montana.

The Centennial Study Area includes the Centennial Mountain Primitive Area, which is managed by the Bureau of Land Management. The primitive area provides the spectacular scenery and watershed for the Red Rock Lakes National Wildlife Refuge. The study area also includes the Mt. Jefferson Roadless Area, which is managed by the Targhee and Beaverhead National Forests. It does not include two large inholdings totaling 16,650 acres managed by the Department of Agriculture's Science and Education Administration as a sheep experiment station. These lands were transferred to the Department of Agriculture in the 1981 Appropriations Act. In addition, it does not include a state school section managed by the Montana Department of State Lands.

The study area contains a portion of the Continental Divide Trail and is a popular area for snowmobiling, big game hunting, and fishing. Phosphate deposits occur within the study area boundary, and there is low to moderate geologic favorability for oil and gas.

Forty-eight percent of the study area has unstable soils. Disturbance of these soils north of the Divide has been linked to sedimentation into the Red Rock Lakes and associated fishery streams.

Ranchers have grazed sheep and cattle in the study area for 100 years. The study area also supports elk, mule deer, moose, and black bear. It contains habitat for threatened and endangered species: grizzly bear, peregrine falcons, wolves, and bald eagles.

The timber consists mainly of Douglas-fir with some alpine fir and spruce. Some of the forests are highly productive.

The study area lies in a remote, rural area where the population density is very low. The major occupations in the surrounding area are ranching, logging, mining, and working in recreation-related businesses. The Fish and Wildlife Service maintains a headquarters for the Red Rocks National Wildlife Refuge at Lakeview just north of the study area.

## ISSUES

Public response to an issue survey identified the following issue areas that are analyzed in this environmental impact statement.

Wilderness Values
Recreation Activities and Use Levels
Wildlife Habitat
Range Resources
Timber Resources
Minerals and Energy Development
Unstable Soils
Economics

## ALTERNATIVES INCLUDING THE PROPOSED ACTION

An environmental impact statement usually has one alternative that represents current management, called a No Action Alternative. This document will not evaluate a No Action Alternative because the designation of 21,774 acres of public land as the Centennial Mountain Primitive Area no longer exists and some change in the management prescription will therefore be needed. The No Wilderness alternative in this document is equivalent to the No Action alternative because the land, if not recommended for wilderness, would be managed according to existing management plan direction.

## Alternative 1

Alternative 1 is the proposed action. It recommends 26,248 acres for wilderness, including the lands once designated as the Centennial Mountain Primitive Area and the portion of the Mt. Jefferson Roadless Area that lies in Montana. The management of the 46,637 acres not recommended for wilderness is established in current land management plans.

Wilderness values will remain undisturbed on 36 percent of the study area in Montana, be disturbed by development activities on 6 percent in Montana, and generally be maintained on 58 percent in Idaho. Vehicle access will be allowed in the northwest portion in the summer and fall. However, 17 percent of the snowmobile use will be lost.

Livestock grazing south of the Continental Divide may increase by 13 percent over the long term. About 10,700 acres of elk habitat will remain undisturbed while 2,500 acres will be available for logging. Conflicts between development activity and grizzly bears will remain low on 26,248 acres in Montana. In addition, conflict will remain low on 25,300 acres of Situation 2 grizzly bear habitat in Idaho that is not recommended for wilderness.

Erosion and slumping may increase on 48 percent of the unstable soils due to development activities. This will not increase sediment levels flowing into the Red Rock Lakes. However, 15 percent of the drainage inside the study area that feeds both onsite and offsite wetlands below Red Rock Lakes may be developed. This will affect trumpeter swan and fisheries habitats in Montana.

Oil and gas activity on 6,507 acres of existing leases will be restricted in the short term and foregone on 26,248 acres in the long term. About 77 percent of the annual timber harvest will be foregone over the long term. The annual timber harvest on lands not recommended for wilderness could support five jobs. However, 20 potential jobs in timber and recreation would not be realized compared to the No Wilderness Alternative.

This alternative would sustain $344,365 of annual income to the local economy from all economic activities. However, an additional $418,397 would not be realized.

## Alternative 2

Alternative 2 recommends the entire Centennial Study Area for wilderness. This includes 72,885 acres in both Montana and Idaho.

Wilderness values will remain undisturbed on the entire study area. No recreation vehicle access will be allowed, and all current snowmobile use will be eliminated. Livestock grazing will continue at present levels. Elk and grizzly bear habitat will remain undisturbed. But on the other hand, no wildlife or grizzly bear habitat improvement projects will be undertaken.

Present leases for oil and gas represent a potential impact on 33 percent of unstable soils. However, development is not likely during the life of the leases. Therefore, all the drainage inside the study area that feeds both onsite and offsite wetlands will remain undisturbed. Development activity probably will not occur on unstable soils. But on the other hand, no soil stabilization projects will be allowed. Therefore, only natural slumping and erosion will continue to add sediment into the Red Rock Lakes.

Oil and gas activity on 12,785 acres will be restricted in the short term on existing leases and foregone on 72,885 in the long term. All potential timber harvest in the study area will be foregone over the long term. Seven jobs would be sustained in ranching and recreation compared to the No Wilderness Alternative. The restrictions on logging will result in the loss of 22 potential jobs. All economic activity would sustain $135,572 in annual income to the local economy. However, an additional $627,190 would not be realized.

## Alternative 3

Alternative 3 recommends none of the Centennial Study Area for wilderness. The land will be managed according to current land management plans.

Wilderness values generally will be maintained on 82 percent of the study area, while the wilderness values on the lands north of the Continental Divide and west of Matsingale Creek will be disturbed by development activity. Snowmobiling will be allowed throughout the study area, and vehicle access will be allowed in the northwest portion in the summer and fall.

Livestock grazing may increase by 15 percent throughout the study area over the long term. About 13,200 acres of elk habitat will be available for logging. Habitat modification will displace elk and lead to a reduction in hunting in Montana. Conflicts between human activity and grizzly bears may increase on 47,585 acres but will remain low on 25,300 acres in Idaho managed as Situation 2 grizzly bear habitat.

Erosion and slumping may increase on 63 percent of the unstable soils due to development activity. Therefore, there may be an increase in sediment carried into Red Rock Lakes. In addition, 45 percent of the drainage inside the study area that feeds both onsite and offsite wetlands below Red Rock Lakes may be developed. This will affect trumpeter swan and fisheries habitats in Montana due to increased siltation.

Oil and gas exploration will be permitted. If a discovery is made, development will conform to stipulations outlined in current management plans. The suitable timber in the northwest portion will be harvested over the long term. The annual timber harvest could support 22 jobs. In addition, 16 jobs in ranching and recreation would be sustained. All economic activity would sustain $762,762 in annual income to the local economy.

## Alternative 4

Alternative 4 recommends 26,619 acres for wilderness. This includes the eastern portion of the study area in Montana and Idaho. The management of the 46,266 acres not recommended for wilderness is established in current land management plans.

Wilderness values will remain undisturbed on 37 percent of the study area, be disturbed by logging on 27 percent in Montana, and generally maintained on 36 percent in Idaho.

Vehicle access will be allowed in the northwest portion in the summer and fall, but 40 percent of the current snowmobile use may be lost.

Livestock grazing may increase by 12 percent over the long term in the portion not recommended wilderness. About 13,200 acres of elk habitat will be available for logging. Habitat modification will displace elk and lead to a reduction in hunting in Montana. Conflicts between human activity and grizzly bears will remain low on 26,619 acres. In addition, 25,300 acres of which 9,817 acres are not recommended as wilderness, will be managed as Situation 2 grizzly bear habitat in Idaho.

Erosion and slumping may increase on 63 percent of the unstable soils due to development activities. This will not increase sediment levels flowing into the Red Rock Lakes. However, 45 percent of the drainage inside the study area that feeds both onsite and offsite wetlands below Red Rock Lakes may be developed. This will affect trumpeter swan and fisheries habitats in Montana due to increased siltation.

Oil and gas activity on 1,166 acres will be restricted in the short term on existing leases and foregone on 26,619 acres in the long term. The suitable timber in the northwest portion will be harvested over the long term. The annual timber harvest could support 22 jobs. In addition, 13 jobs in ranching and recreation would be sustained compared to the No Wilderness Alternative. All economic activity would sustain $724,130 in annual income to the local economy. However, an additional $38,632 in annual income would not be realized.

* * *

## Alternative 5

Alternative 5 recommends 29,264 acres for wilderness. This includes the western portion of the study area in Montana and Idaho. The management of the 43,621 acres not recommended for wilderness is established in current land management plans.

Wilderness values will remain undisturbed on 40 percent of the study area and be generally maintained on 60 percent. No recreation vehicle access will be allowed in the western portion, and 20 percent of the snowmobile use may be lost.

Livestock grazing may increase by five percent over the long term in the portion not recommended for wilderness. About 13,200 acres of elk habitat will remain undisturbed. Conflicts between human activity and grizzly bears will remain low on 29,264 acres. In addition, 25,300 acres not recommended as wilderness will be managed as Situation 2 grizzly bear habitat in Idaho.

Erosion and slumping may increase on 33 percent of the unstable soils due to development activities. This will not cause increases in sediment levels flowing into Red Rock Lakes. In addition, all of the drainage inside the study area that feeds both onsite and offsite wetlands will be maintained in its present condition.

Oil and gas activity on 11,068 acres will be restricted in the short term on existing leases and foregone on 29,264 acres in the long term. The suitable timber in the northwest portion will not be harvested. The restrictions on logging will result in the loss of 22 potential jobs. However, 15 jobs in ranching and recreation would be sustained as compared to the No Wilderness Alternative. All economic activity would sustain $223,114 in annual income to the local economy. However, an additional $539,648 in annual income would not be realized.

* * *

## Alternative 6

Alternative 6 recommends 55,883 acres for wilderness. This includes the areas recommended in both Alternatives 4 and 5. The management of the 17,002 acres not recommended for wilderness is established in the Targhee Land Management Plan.

Wilderness values will remain undisturbed on 77 percent of the study area and generally maintained on 23 percent. No recreation vehicle access will be allowed in the northwest portion, and 60 percent of the snowmobile use may be lost.

Livestock grazing may increase by 4 percent over the long term in the portion not recommended for wilderness. About 13,200 acres of elk habitat will remain undisturbed. Conflicts between human activity and grizzly bears will remain low on 55,883 acres. In addition, 25,300 acres of which 9,817 acres are not recommended wilderness, will be managed as Situation 2 grizzly bear habitat in Idaho.

Present leases for oil and gas represent a potential impact on 33 percent of unstable soils. However, development is not likely during the life of the leases. Therefore, all of the drainage inside the study area that feeds onsite and offsite wetlands will remain undisturbed. Development activity probably will not occur on unstable soils. Natural slumping and erosion will continue to add sediment into Red Rock Lakes at existing rates.

Oil and gas activity on 12,234 acres will be restricted in the short term on existing leases and foregone on 55,883 acres in the long term. The suitable timber in the northwest portion will not be harvested. Eleven jobs would be sustained in ranching and recreation compared to the No Wilderness Alternative. The restrictions on logging will result in the loss of 22 potential jobs. All economic activity would sustain $176,616 in annual income to the local economy. However, an additional $586,146 in annual income would not be realized.

* * *

## Alternative 7

Alternative 7 recommends 18,067 acres for wilderness. This includes the entire Red Rock Lakes drainage within the study area. The management of the 54,818 acres not recommended for wilderness is established in current land management plans.

Wilderness values will remain undisturbed on 25 percent of the study area in Montana, be disturbed by development activities on 17 percent in Montana, and generally maintained on 58 percent in Idaho. Vehicle access will be allowed in the northwest portion in the summer and fall, but 27 percent of the snowmobile use may be lost.

Livestock grazing may increase by 13 percent over the long term in the portion not recommended for wilderness. About 11,500 acres of elk habitat will be available for logging, while 1,700 acres will be protected. Habitat modification will displace elk and lead to a reduction in hunting in Montana. Conflicts between human activity and grizzly bears will remain low on 18,067 acres. In addition, 25,300 acres in Idaho, not recommended as wilderness, will be managed as Situation 2 grizzly bear habitat.

Erosion and slumping may increase on 61 percent of the unstable soils due to development activities. This will not increase sediment levels flowing into the Red Rock Lakes. However, 41 percent of the drainage inside the study area that feeds offsite and onsite wetlands below Red Rock Lakes may be developed. This will affect trumpeter swan and fisheries habitat in Montana due to increased siltation.

Oil and gas activity on 3,039 acres will be restricted in the short term on existing leases and foregone on 18,067 acres in the long term. About 11 percent of the annual timber production will be foregone over the long term. The annual timber harvest on lands not recommended could support 20 jobs. However, four potential jobs in timber and recreation would not be realized compared to the No Wilderness Alternative. All economic activity would sustain $676,427 of annual income to the local economy. However, an additional $86,335 would not be realized.

## Alternative 8

Alternative 8 recommends 42,040 acres for wilderness. This includes only the Mt. Jefferson Roadless Area in the Targhee National Forest in Idaho. The management of the 30,845 acres not recommended for wilderness is established in current land management plans.

Wilderness values will remain undisturbed on 58 percent of the study area but be disturbed by development activities in the northwest portion in Montana. Vehicle access will be allowed in the northwest portion in the summer and fall, but 70 percent of the snowmobile use may be lost.

Livestock grazing may increase by four percent over the long term. About 13,200 acres of elk habitat will be available for logging. Habitat modification will displace elk and lead to a reduction in hunting in Montana. In Idaho, conflicts between human activity and grizzly bears will remain low on 42,040 acres of which 25,300 acres are currently maintained as Situation 2 grizzly bear habitat.

Erosion and slumping may increase on 51 percent of the unstable soils due to development activity. Therefore, there may be an increase in sediment carried into the Red Rock Lakes. Also, 45 percent of the drainage inside the study area that feeds the onsite and offsite wetlands below Red Rock Lakes may be developed. This will affect trumpeter swan and fisheries habitat in Montana due to increased siltation.

Oil and gas activity on 2,731 acres will be restricted in the short term on existing leases and foregone on 42,040 acres in the long term. The suitable timber in the northwest portion will be harvested in the long term. The annual timber harvest could support 22 jobs. In addition, ten jobs in ranching and recreation would be sustained compared to the No Wilderness Alternative. All economic activity would sustain $686,253 of annual income. However, an additional $76,509 in annual income would not be realized.

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# CHAPTER 1
# INTRODUCTION

## PURPOSE AND NEED

The Centennial Mountains Wilderness Study and Environmental Impact Statement is prepared in compliance with Section 603 of the Federal Land Policy and Management Act of October 21, 1976. This law directed the Bureau of Land Management (BLM) to inventory, study, and then report to Congress through the Secretary of the Interior and the President, the suitability of certain public lands for inclusion in the National Wilderness Preservation System. The act further required the BLM to report to the President, through the Secretary of the Interior, the wilderness suitability of the BLM's natural or primitive areas designated prior to November 1, 1975. The Centennial Mountains falls under this latter provision and is considered an Instant Study Area.

This document completes the wilderness study requirements for 42 areas (39 wilderness study areas and 3 instant study areas) managed by the BLM in Montana. From this point on, the Federal Land Policy and Management Act requires the Secretary of the Interior to report the recommendations to the President by October 21, 1991. The President has until October 21, 1993 to send the recommendations to Congress. Congress has final authority in the designation of wilderness areas.

This study is also in response to the Forest Service's efforts to administratively review the remainder of forest lands not evaluated for wilderness suitability under the Wilderness Act of September 3, 1964. The Forest Service reviewed its lands under the first and second Roadless Area Review and Evaluation programs. In September 1983, the National Forest Management Act regulations were amended to require that forest plans reevaluate for wilderness suitability the roadless lands included within the plan boundaries. The Forest Service is reevaluating the Mt. Jefferson Roadless Area in cooperation with the BLM because the roadless area is contiguous with the BLM Centennial Primitive Area and other roadless public lands.

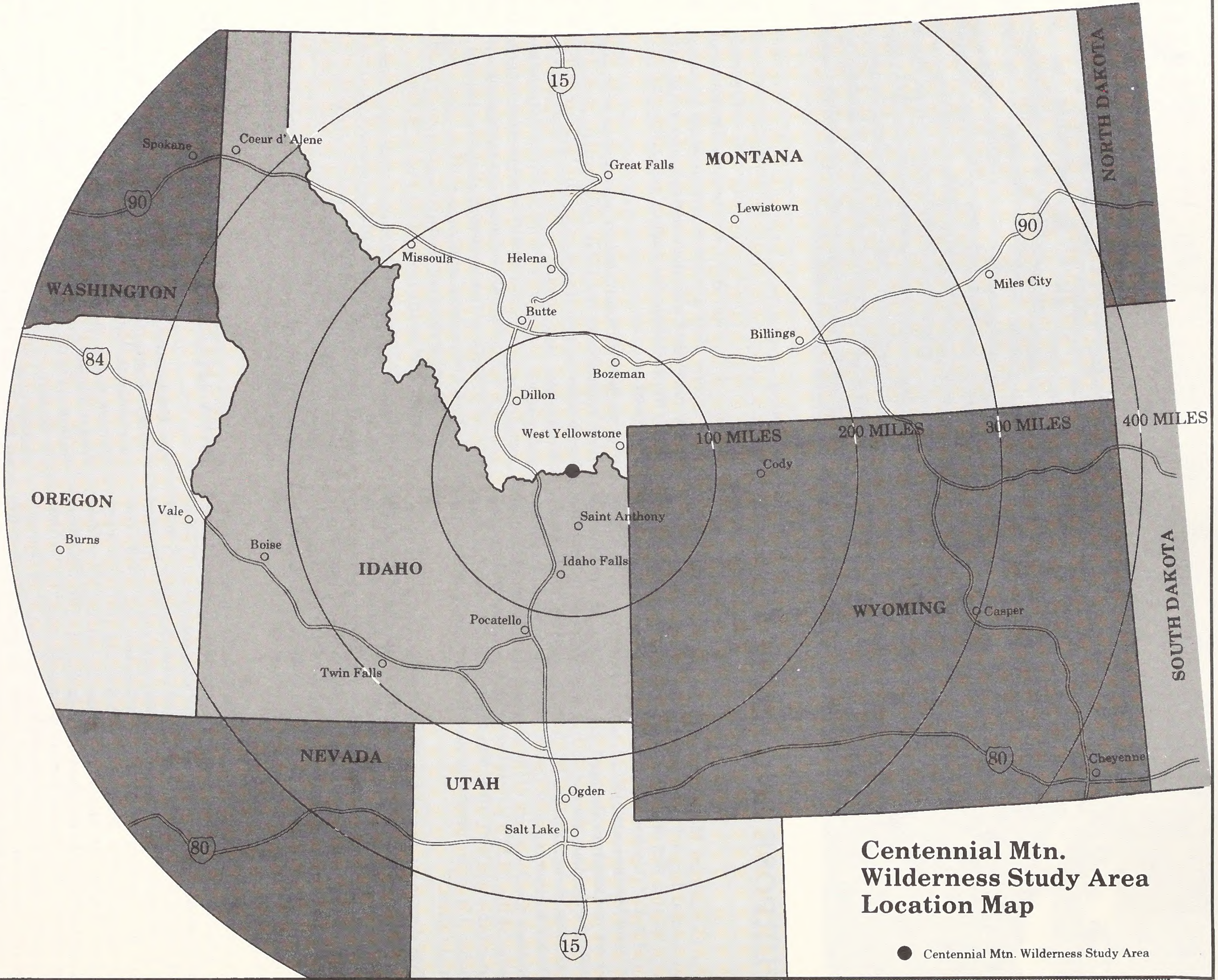
There are four objectives in developing this wilderness study and environmental impact statement. The first is determining which portion(s), if any, of the Centennial Study Area should be recommended to Congress for wilderness classification. The second is to assess and document the environmental impacts of the proposed action and other alternatives. The third objective is to ensure that the affected agencies and the public have a full opportunity to participate in the development of the wilderness study and environmental impact statement. The fourth objective is to ensure that agency recommendations are cooperatively developed and documented, and when differences exist, the rationale for agency recommendations is fully disclosed.

The study was conducted in accordance with BLM planning regulations (43 CFR 1601) which provides for the issuance of national and procedural guidance. The BLM's Wilderness Study Policy serves this purpose. The policy establishes procedures to ensure that suitability recommendations are based on full consideration of all multiple resource values of public lands and consistent with established national policy, and that all interested and affected members of the public and state and local governments are made aware of the study and given adequate opportunity to comment and be involved in the study process.

The study is also in accordance with the Forest Service Forest Land and Resource Management Planning Regulations (36 CFR 219) as amended. These regulations provide for the evaluation of roadless areas for wilderness suitability. They also provide for national consistency, full public participation, and a consideration of significant resource issues to arrive at a recommendation for wilderness.

## ENVIRONMENTAL SETTING

The Centennial Mountains are located in Beaverhead County, Montana, and Clark and Fremont Counties, Idaho (see Location Map). Administration of the area under wilderness study is shared between the Targhee National Forest, Island Park and Dubois Districts; the Beaverhead National Forest, Madison District; and the Butte District of the Bureau of Land Management, Dillon Resource Area. The study area includes a 30-mile segment of the Continental Divide which overlooks the Centennial Valley to the north and the Snake River plain to the south. The study area is bounded on the north by privately-owned lands and portions of the Red Rock Lakes National Wildlife Refuge which is largely a designated wilderness. On the south and



## Centennial Mtn. Wilderness Study Area Location Map

east other Targhee National Forest lands form the boundary. On the west, other BLM-managed lands abut the border. The study area contains 72,885 acres. The study area does not include 16,500 acres enclosed within its borders which is managed by the Agricultural Research Service for sheep research.

Elevations in the study area range from 6,800 feet on the east to over 9,800 feet at the mountain summits. The northern face of the range rises nearly 3,000 feet in less than a mile. The climate is harsh and cold with considerable snowfall. Lower slopes are covered with Douglas-fir with scattered stands of lodgepole pine, Englemann spruce, alpine fir, and quaking aspen. As elevation increases there is a vegetative change from mature forest to large alpine meadows with scattered stands of subalpine fir, spruce, and whitebark pine.

## PLANNING PROCESS

The BLM portion of the Centennial Mountains under wilderness study is within lands included in the Dillon Management Framework Plan (USDI, BLM 1979). This plan makes coordinated land use decisions for all resources and establishes objectives for each resource and the activities that support it. Conflicts between resources were reconciled through analysis and discussion, including public comment. This plan contains specific resource recommendations, decisions, and trade-offs based on particular resource conditions and was finalized in 1979. Comments from the public were sought for the updated plan at public meetings held in 1977 and 1978. The major decisions that affect the Centennial Mountains are included in Appendix D.

The Management Framework Plan was completed prior to completion of the wilderness inventory and requires amending to include this wilderness study and subsequent management decisions determined by Congress. This Environmental Impact Statement, in conjunction with Congressional action, will serve to amend the plan.

Bureau of Land Management Planning Regulations Manual Section 1601.8(b)(3) and 1601.6-3 detail Management Framework Plan amendments. The regulations require that the amendment process use all the steps of the resource management planning process (43 CFR 1601). The planning steps are:

identification of issues,
development of planning criteria,
inventory data and information collection,
management situation analysis (present resources and management),
selection of alternatives,
analysis of alternatives' impacts,
selection of the preferred alternative (Draft EIS),
selection of resource management plan (Final EIS), and
monitoring and evaluation.

The Targhee National Forest roadless area in Mt. Jefferson #15962 was examined in Appendix A of the 1985 *Land Management Plan for the Targhee National Forest and Final Environmental Impact Statement* (USDA, FS 1985b). A 1984 supplement to the Land Management Plan reevaluated in a site-specific manner both this area and the other roadless areas on the Targhee. The land management plan directs the Targhee to study the area for wilderness suitability in cooperation with the BLM and Beaverhead National Forest.

The Beaverhead National Forest portion of the Mt. Jefferson Roadless Area, numbered 1-962, was considered for wilderness in the *Forest Plan for the Beaverhead National Forest and Final Environmental Impact Statement* (USDI, FS 1986b) and the effects of wilderness designation were examined in Appendix C of the Final Environmental Impact Statement that accompanied the plan. In all documents, both the Beaverhead and Targhee National Forests prescribed management that will maintain wilderness characteristics until Congress acts on wilderness suitability for the Centennial Study Area.

The Forest Service Planning Process is outlined in 36 CFR 219 and is guided by Forest Service Manual 1900. The planning steps are:

identification of purpose and need,
development of planning criteria,
inventory data collection,
analysis of the management situation,
formulation of alternatives,
estimation of the effects of alternatives,
evaluation of alternatives,
selection of the preferred alternative (Draft EIS),
approval of the plan by the Regional Forester (Final EIS), and
monitoring and evaluation.

This Environmental Impact Statement in conjunction with Congressional action will serve to amend the National Forest Plans.

## MANAGEMENT HISTORY OF THE AREA

In March 1965, a Memorandum of Understanding was signed between the BLM and the Agricultural Research Service establishing dual management of the public lands in the Centennials.

In October 1973, portions of the Centennial Mountains were studied by the Forest Service under RARE I. The area was recommended for nonwilderness use.

In August 1975, 21,985 acres of the BLM portion of the Centennial Mountains were administratively designated a Primitive Area.

In October 1976, Congress passed the Federal Land Policy and Management Act which mandated the BLM to study all Primitive and Natural Areas for wilderness suitability under Section 603.

In July 1978, 6,700 acres managed by the Targhee National Forest were recommended for further planning in the Land Management Plan for Island Park Planning Unit and carried into RARE II.

In January 1978, Montana Wilderness Association petitioned to revoke the Agricultural Research Service withdrawal.

In January 1978, the BLM requested revocation of the Agricultural Research Service withdrawal.

In January 1978, an appeal was upheld by the Chief of the Forest Service when he directed the study of roadless Targhee National Forest lands contiguous to the BLM Centennial Study Area.

In January 1980, the Department of Interior Appropriations Act of Fiscal Year 1981 disallowed use of budget funding for studying for wilderness that portion of the Centennials managed by the Agricultural Research Service.

In December 1981, the Sheep Station was removed from dual administration of Department of Agriculture and Department of Interior. The area was released from BLM wilderness study.

In July 1982, the results of Intensive Inventories of the Centennial Study Area were released to the public. A 30-day public comment period followed.

In January 1985, the results of the final decision on Intensive Inventory results and Notice of Interest to Study were released to the public in the Federal Register.

# ISSUE IDENTIFICATION (SCOPING)

Throughout the inventory stage of the wilderness evaluation of the Centennial Mountains, the public had opportunities to attend meetings, open houses, or other informal meetings in addition to letting BLM know of their concerns in writing. From this open forum, a number of issues were generated and were sent to the public in February 1985 (see Appendix A). The issues discussed were:

Minerals and Energy
Range
Snowmobile Use
Timber
Elk
Grizzly Bear
Watershed
Wilderness
Economics
Boundaries

Public comment on the issues brochure aided the interdisciplinary team in refining the issues for analysis in the environmental impact statement. The ten issues identified in the scoping process were combined into eight issue topics for analysis of impacts. The wilderness and boundaries issues are analyzed under wilderness. The wildlife habitat issue analyzes impacts to onsite and offsite aquatic habitat, grizzly bear habitat, threatened and endangered species habitat, and elk habitat. The snowmobile use issue was expanded to an analysis of impacts on recreation activities and use levels.

The eight analyses topics are:

Wilderness Values
Recreation Activities and Use Levels
Wildlife Habitat
Range Resources
Timber Resources
Mineral and Energy Development
Unstable Soils
Economics

# DEVELOPMENT OF PLANNING CRITERIA AND QUALITY STANDARDS

Based on the issues identified both nationally and locally, planning criteria and quality standards were developed in the BLM's Wilderness Study Policy to direct the procedures for evaluation of suitability and nonsuitability of each wilderness study area.

## Planning Criteria

The planning criteria were used to evaluate wilderness values and manageability.

### Evaluation of Wilderness Values

This criterion considered the extent to which each of the following components contributed to the overall values of an area for wilderness purposes.

**Mandatory Wilderness Characteristics.** This component considered the quality of the area's naturalness, size, and outstanding opportunities for solitude or primitive recreation.

**Supplemental Values.** This component considered the presence or absence and the quality of optional wilderness characteristics such as ecological, geological, or other features of scientific, educational, scenic, or historical value.

**Multiple Resource Benefits.** This component considered the benefits to other resources and uses that would be ensured by wilderness designation of the area.

**Diversity in the National Wilderness Preservation System.** This component considered the extent to which wilderness designation of the area under study would contribute to expanding the diversity of the National Wilderness Preservation System from the standpoint of each of the following factors:

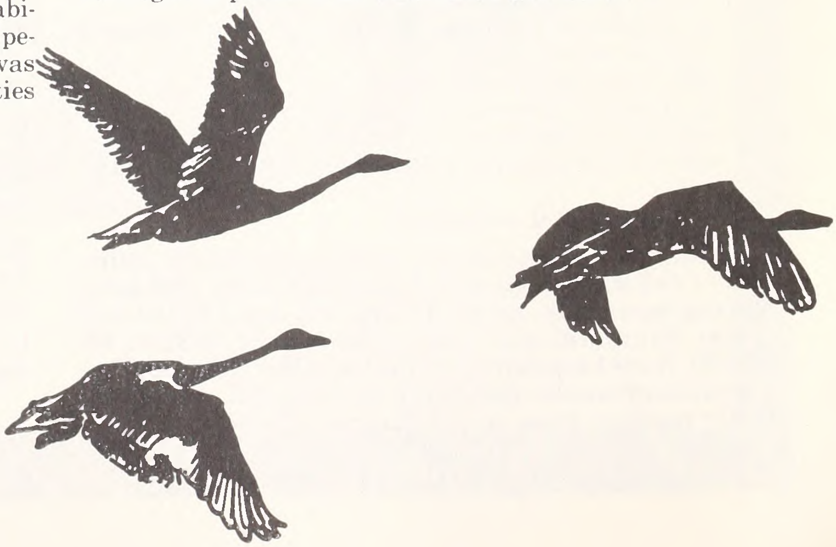
Expanding the diversity of natural systems and features, as represented by ecosystems and landforms.

Expanding the opportunities for solitude or primitive recreation within a day's driving time (5 hours) of major population centers.

Balancing the geographic distribution of wilderness.

### Manageability

This criterion evaluated how effectively the area could be managed to preserve its wilderness character.



## Quality Standards

In addition to the planning criteria, a set of quality standards were developed to ensure consistency.

**Energy and Mineral Resource Values.** This quality standard considered any identified or potential energy and mineral resource values.

**Impacts on Other Resources.** This quality standard considered the extent to which other resource values or uses of the area would be foregone or adversely affected as a result of wilderness designation.

**Impact of Nondesignation on Wilderness Values.** This quality standard considered the alternative use of the land under study if the area is not designated as wilderness, and the extent to which the wilderness values of the area would be foregone or adversely affected as a result of this use.

**Public Comment.** This quality standard considered comments received from interested and affected publics at all levels.

**Local, Social, and Economic Effects.** This quality standard gave special attention to adverse or favorable social and economic effects that designation of the area would have on local areas.

**Consistency with Other Plans.** This quality standard considered consistency with officially approved and adopted resource-related plans of other federal agencies, state and local governments, and Indian tribes.

# THE ALTERNATIVES SELECTED

The interdisciplinary team formulated the following eight alternatives after their review of public comment, identification of resource values, evaluation of existing and potential resource conflicts, and application of the wilderness planning criteria and quality standards.

An environmental impact statement usually has one alternative that represent current management, called a No Action Alternative. This document will not evaluate a No Action Alternative because the designation of 21,774 acres of public land as the Centennial Mountain Primitive Area no longer exists.

**Alternative 1 Proposed Action.** A total of 26,248 acres (21,774 acres previously managed as a primitive area by the BLM and 4,474 acres managed by the Beaverhead National Forest) would be recommended for wilderness. The remaining 46,637 acres would be recommended nonsuitable.

**Alternative 2.** All 72,885 acres would be recommended for wilderness designation.

**Alternative 3.** No acreage would be recommended for wilderness designation.

**Alternative 4.** A total of 26,619 acres (6,662 acres managed by the BLM, 15,483 acres managed by the Targhee National Forest, and 4,474 acres managed by the Beaverhead National Forest) north and south of the Continental Divide and east of Section 36, T. 14 S., R. 2 W., would be recommended for wilderness while 46,266 acres would be recommended nonsuitable.

**Alternative 5.** A total of 29,264 acres (19,709 acres managed by the BLM north of the Continental Divide and west of Section 36, T14S, R2W and 9,555 acres managed by the Targhee National Forest south of the Divide) would be recommended for wilderness while 43,621 acres would be recommended nonsuitable.

**Alternative 6.** A total of 55,883 acres managed by the BLM, Targhee National Forest, and Beaverhead National Forest lands north and south of the Continental Divide as described above in Alternative 4 and 5 would be recommended for wilderness while 17,002 acres would be recommended nonsuitable.

**Alternative 7.** A total of 18,067 acres (13,593 acres managed by the BLM and 4,474 acres managed by the Beaverhead National Forest) north of the Continental Divide and representing the major portions of the watershed of the Red Rock Lakes National Wildlife Refuge would be recommended for wilderness while 54,818 acres would be recommended nonsuitable.

**Alternative 8.** A total of 42,040 acres managed by the Targhee National Forest south of the Continental Divide would be recommended for wilderness while 30,845 acres to the north would be recommended nonsuitable.

These eight alternatives will provide a range of possible wilderness recommendations. The proposed action is BLM's and the Forest Service's management recommendation at the conclusion of the planning process.

# CHAPTER 2
# DESCRIPTION OF THE ALTERNATIVES

## INTRODUCTION

Chapter 2 describes the proposed action and a range of seven other alternatives for the Centennial Study Area. In addition, Table 2-3 at the end of this chapter summarizes the environmental impacts resulting from selection of each alternative.

In this study, alternatives are distributed between the minimum resource potential and the maximum resource potential to reflect the full range of major commodity and environmental resource uses and values. The two alternatives are:

> The All Wilderness Alternative (Alternative 2) which recommends the entire study area as suitable for wilderness designation. If Congress selects this alternative, the study area would be managed under the BLM's Wilderness Management Policy and under the Forest Service's Wilderness Management Policy.
>
> The No Wilderness Alternative (Alternative 3) which recommends no part of the study area as suitable for wilderness designation.

This study does not consider a separate No Action Alternative but combines the No Action with the No Wilderness Alternative. Under a No Action Alternative, management for resource values other than wilderness would continue in the Centennial Mountains. However, a portion of the study area was previously administratively classified as a BLM primitive area, a classification that no longer exists under federal regulation. Therefore some change in the management prescription must be made. At the same time, the No Wilderness Alternative is equivalent to the No Action Alternative, because the land, if not recommended for wilderness, would be managed according to existing management plans.

In addition to the two preceding alternatives, partial wilderness alternatives will also be considered. Partial wilderness alternatives allow portions of a study area to be recommended for wilderness designation. Three guidelines were used to arrive at the partial wilderness alternatives: (1) to resolve conflicts between wilderness and other resource uses, (2) to improve the agencies' ability to protect the wilderness resource in the long term, and (3) to ensure examination of a full range of alternatives.

Resource conflicts arise when other uses compete with wilderness values such as solitude, primitive recreation, or natural character. The protection of the study area's wilderness values in the long term is affected by the type and location of inholdings, valid existing rights, the presence of cherry-stemmed (dead-end) or segmenting roads, the presence of boundaries identifiable in the field, the potential to remove unneeded constructed features, and the type and location of outside influences.

## DESCRIPTION OF ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Eight alternatives were identified during the scoping and planning process. The eight alternatives analyzed in this document are described below and summarized in Table 2-1. The direction which appears after each alternative description is a summary of existing and projected management plan guidance and outlines what would occur if that particular alternative were chosen.

Any portion of the study area not designated as wilderness by Congress will be managed as outlined in the respective management plans.

Study area lands in the Beaverhead National Forest, if not designated wilderness, will be managed as described in the *Forest Plan* (USDA, FS 1986b). Appendix B contains the specific management direction.

Study area lands in the Targhee National Forest, if not designated wilderness, will be managed as described in the *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b). Appendix C contains the specific management direction.

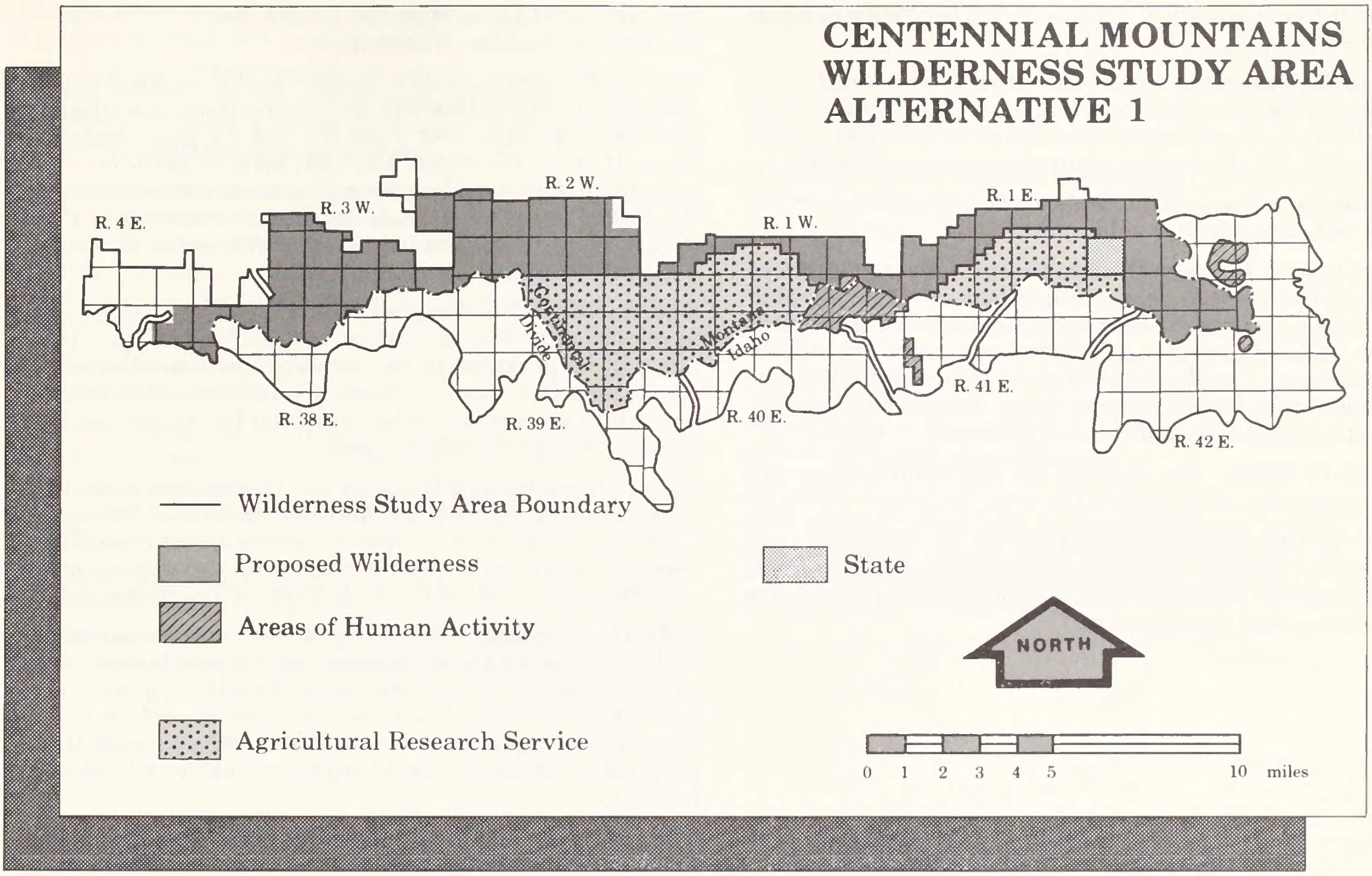
Study area lands in the Dillon Resource Area of the BLM, if not designated wilderness, will be managed as described in the *Management Framework Plan* (USDI, BLM 1979). Appendix D contains the specific management direction.

## TABLE 2-1
## SUMMARY OF PROPOSED ACTION AND ALTERNATIVES FOR CENTENNIAL MOUNTAINS

| | Acres Recommended for Wilderness | | | |
|---|---|---|---|---|
| **Alternative** | **BLM** | **Beaverhead NF** | **Targhee NF** | **Total** |
| 1. Proposed Action | 21,774 | 4,474 | 0 | 26,248 |
| 2. All Wilderness | 26,371 | 4,474 | 42,040 | 72,885 |
| 3. No Wilderness | 0 | 0 | 0 | 0 |
| 4. Partial Wilderness | 6,662 | 4,474 | 15,483 | 26,619 |
| 5. Partial Wilderness | 19,709 | 0 | 9,555 | 29,264 |
| 6. Partial Wilderness | 26,371 | 4,474 | 25,038 | 55,883 |
| 7. Partial Wilderness | 13,593 | 4,474 | 0 | 18,067 |
| 8. Partial Wilderness | 0 | 0 | 42,040 | 42,040 |

| | Acres Not Recommended for Wilderness | | | |
|---|---|---|---|---|
| **Alternative** | **BLM** | **Beaverhead NF** | **Targhee NF** | **Total** |
| 1. Proposed Action | 4,597 | 0 | 42,040 | 46,637 |
| 2. All Wilderness | 0 | 0 | 0 | 0 |
| 3. No Wilderness | 26,371 | 4,474 | 42,040 | 72,885 |
| 4. Partial Wilderness | 19,709 | 0 | 26,557 | 46,266 |
| 5. Partial Wilderness | 6,662 | 4,474 | 32,485 | 43,621 |
| 6. Partial Wilderness | 0 | 0 | 17,002 | 17,002 |
| 7. Partial Wilderness | 12,778 | 0 | 42,040 | 54,818 |
| 8. Partial Wilderness | 26,371 | 4,474 | 0 | 30,845 |

NF = National Forest
BLM = Bureau of Land Management



## Alternative 1: Proposed Action

### Wilderness Recommendation

Lands recommended as suitable for wilderness designation in Alternative 1 cover 21,774 acres of the original BLM Primitive Area and 4,474 acres of the Beaverhead National Forest. All 26,248 acres are north of the Continental Divide in Montana (see Alternative 1 Map). Private land and the Red Rock Lakes National Wildlife Refuge border the study area to the north. The Sheep Station, along with national forest lands recommended for nonwilderness, form the border to the east and south. To the west, nonwilderness public lands form the border.

This alternative recommends most of the north-facing mountain range which overlooks the Centennial Valley for wilderness designation but excludes some of the timbered lands on the west end. A total of 46,637 acres are not recommended for wilderness.

The following summary by resource details what direction management would take if this alternative were selected. Management direction for portions of the alternative recommended for wilderness are displayed separately from management direction for portions not recommended for wilderness.

### Management Direction for Lands Recommended for Wilderness

The 21,774 acres of public lands will be managed under the BLM's Wilderness Management Policy, and the 4,474 acres managed by the Beaverhead will be administered under the Forest Service Wilderness Policy.

**Recreation.** Off road vehicle use will be prohibited. No recreation facilities are planned. The Odell Creek haul road will be closed year-round to motorized vehicles including snowmobiles.

**Wildlife Habitat.** Wildlife habitat will remain undisturbed by development activities. Specifically, 10,700 acres of elk fall and migrational staging habitat will not be logged. A total of 62,714 acres of elk summer range and 26,248 acres of aquatic habitat watershed will remain undisturbed. All of the Red Rock Lakes National Wildlife Refuge watershed on the study area will remain undisturbed by development activity. Stream structures to improve west slope cutthroat trout habitat will be constructed on seven miles of stream.

The 26,248 acres recommended for wilderness is occasionally visited by the grizzly bear and will remain undisturbed by development activity. No wildlife or grizzly bear habitat improvement projects will be undertaken on Beaverhead National Forest lands.

The introduction of mountain goats was recommended on public lands in the Centennials. However, this project would not be compatible with a wilderness designation because the goats may not be native to the study area and motorized vehicles or helicopters would be needed to bring in the goats.

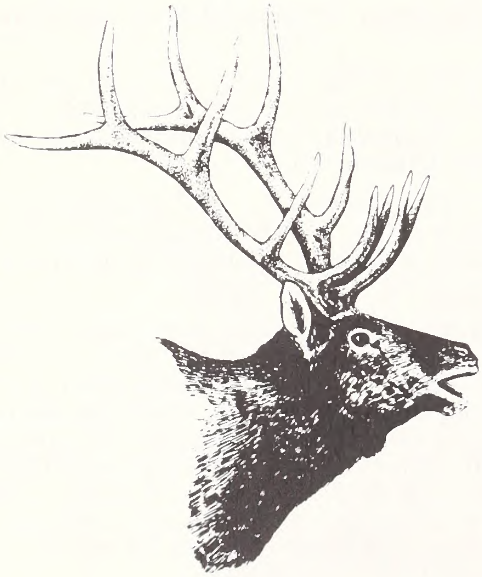
**Range Resources**. Livestock grazing will continue at current levels. Construction of one-half mile of fence in the Price Peet allotment will occur without the use of motorized equipment. No other range improvements are planned.

**Timber Resources**. No timber will be harvested on the lands recommended for wilderness.

**Mineral and Energy Development**. No new mineral claims or leases will be allowed on the lands designated wilderness. Existing leases could be explored until they expire under stipulations designed to protect the wilderness resource. Development of existing leases could occur without regard for wilderness values as long as there was no undue degradation of the environment.

**Unstable Soils**. No projects for soil stabilization will occur.

Water quality and sediment levels will be influenced only by natural events. The only development activity that could occur on unstable soils is minerals or energy lease exploration and development.



### Management Direction for Lands Not Recommended for Wilderness

The 42,040 acres managed by the Targhee and not recommended for wilderness will be administered according to the *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b). The 4,597 acres of public land not recommended for wilderness will be managed according to the *Dillon Resource Area Management Framework Plan* (USDI, BLM 1979). The management direction is detailed in Appendix C and D respectively.

**Recreation**. On Targhee National Forest lands, no developed sites will be constructed. Recreation opportunities will be provided in the semiprimitive, nonmotorized Recreation Opportunity Spectrum category. Snowmobiling will be allowed in winter. The East Dry Creek and Keg Springs roads will remain open.

On public lands, vehicle access will be managed according to the Interagency Visitor Map for Southwest Montana. Currently 3,860 acres are open to vehicle access from May 1 through December 1. A trail alignment and management plan for the Continental Divide Trail will be developed.

**Wildlife Habitat**. The Targhee National Forest lands will be managed for an increase in elk population and a small increase in elk security cover. Situation 2 grizzly bear habitat (25,300 acres) will be managed according to the *Grizzly Bear Guidelines* (USDI, FWS 1986). No projects are planned in the near future to improve wildlife and fisheries habitat.

The public lands will be considered for designation as an Area of Critical Environmental Concern for the protection of the habitat of species listed in Table 2-2.

### TABLE 2-2

### CENTENNIAL MOUNTAINS

### WILDLIFE HABITAT CONSIDERED FOR AREA OF CRITICAL ENVIRONMENTAL CONCERN

| Category | Species | Occurrence |
|---|---|---|
| Threatened and endangered | Peregrine falcon | Uncommon |
| | Grizzly bear | Uncommon |
| | Wolf | Extirpated |
| Species of special interest or concern* | Wolverine | Rare |
| | Canada lynx | Uncommon |
| | Northern goshawk | Uncommon |
| | Sharp-shinned hawk | Uncommon |
| | Cooper's hawk | Uncommon |
| | Long-eared owl | Common |
| | Prairie falcon | Common |
| | Golden eagle | Common |
| | Westslope cutthroat trout | Common |
| | Grayling | Extirpated |
| | Yellowstone cutthroat trout | Uncommon |

*As listed by Montana Department of Fish, Wildlife and Parks

**Range Resources**. On Targhee National Forest lands, livestock grazing will be managed for a small increase in use and an improvement in range condition. Range improvements will be constructed where they are cost effective. Livestock grazing in riparian areas will be managed to prevent damage to streams.

On public lands, livestock grazing will be managed to protect other resources such as water quality and riparian habitat. If these resources show damage from livestock grazing, changes will be made in livestock use. These changes may be in season of use, grazing systems, or number of livestock.

**Timber Resources**. No timber harvest is planned on Targhee National Forest lands.

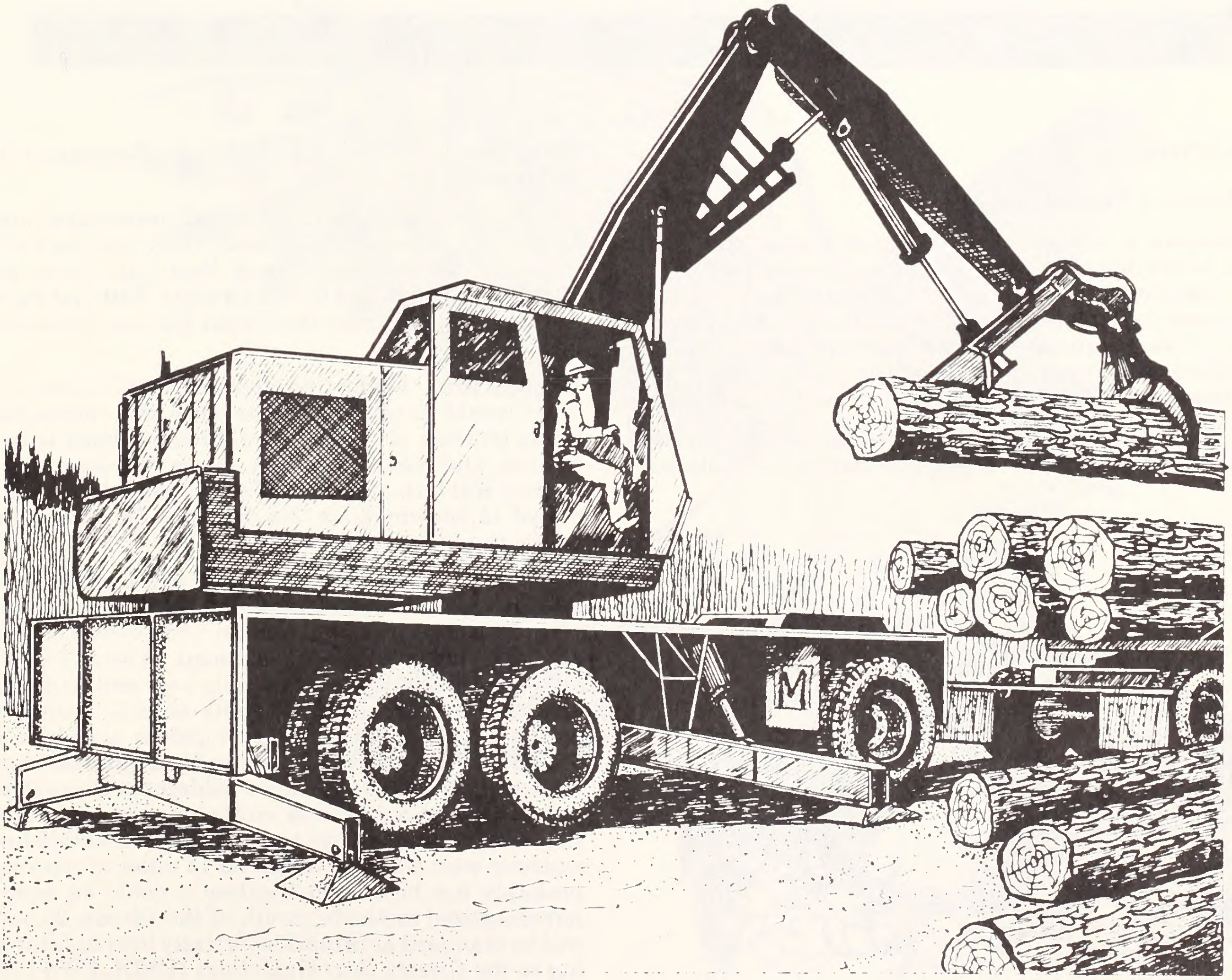
On public lands, the Peet Creek Timber Sale will be offered. Other timber harvest may be scheduled on 3,000 acres. The Montana Cooperative Elk Logging Study recommendations (USDA, FS 1982) including any future revisions will be followed.

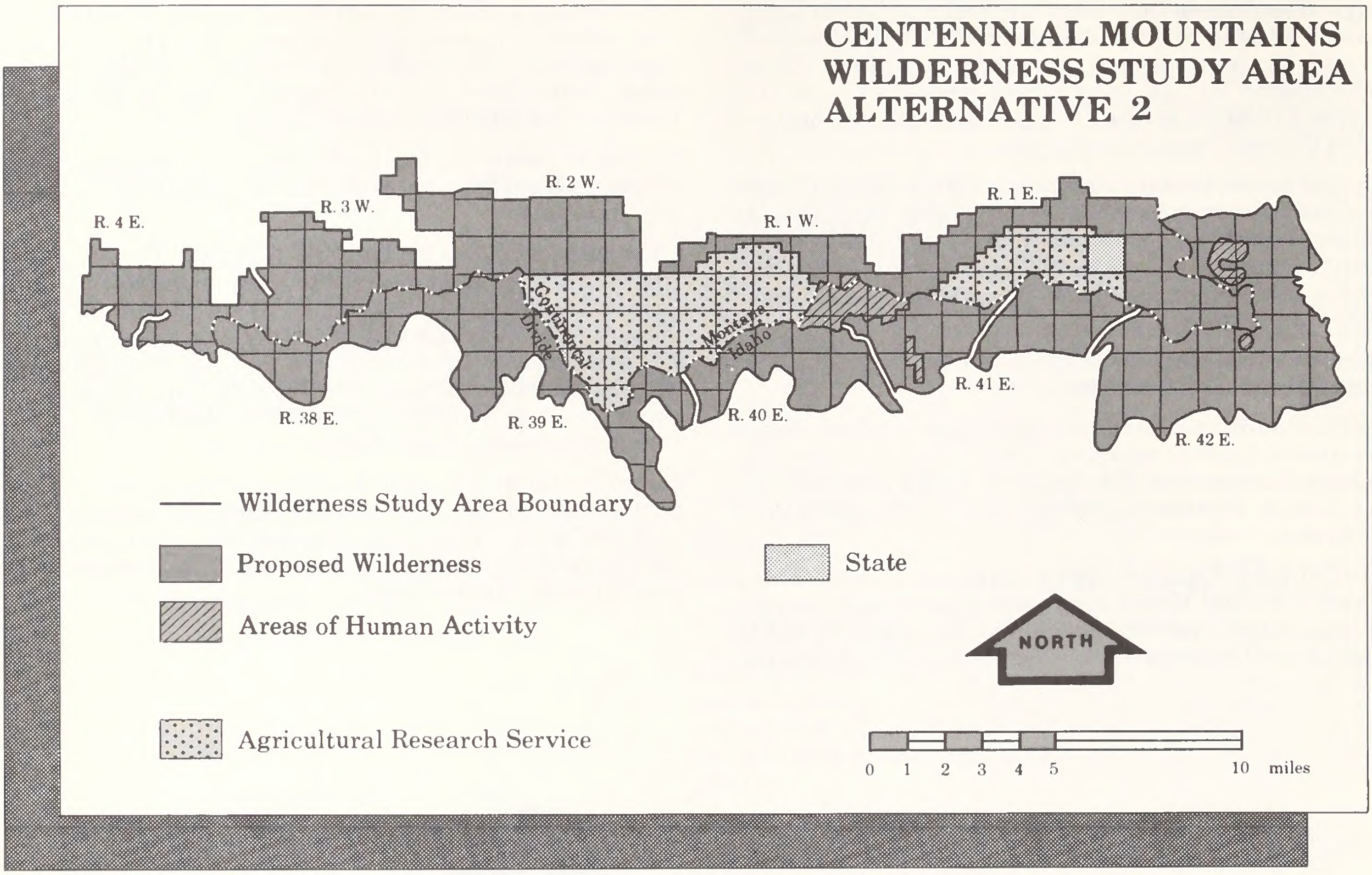
**Mineral and Energy Development**. Most of the Targhee National Forest lands will be available for mineral exploration and leasing. Special stipulations will be attached to all mineral leases to protect specific resources. Stipulations prohibiting surface occupancy will apply to some environmentally sensitive sites. The Tin Cup building stone claim will be administered under existing regulations. Exploration and development will be guided by Forest-wide standards and guidelines.

On public lands, mineral and energy development will be allowed but surface occupancy will be prohibited on leaseable minerals.

**Unstable Soils**. On Targhee National Forest lands, watershed stabilization projects (contour furrowing) will be maintained. Rate of soil erosion will be dependent on the amount of mineral activity. No other development activities are planned. East Dry Creek and Keg Springs roads will be reconstructed to prevent degradation of the soil and water resource. Best Management Practices will be used in conjunction with all activities.

On public lands, an Area of Critical Environmental Concern classification will be considered for existing and potential mass failure sites. Special mitigative measures will be applied to any projects proposed in those areas to prevent mass failure of soils.





## Alternative 2

### Wilderness Recommendation

Alternative 2 recommends the entire Centennial Study Area, consisting of 72,885 acres, for wilderness designation and represents the maximum acreage that could be recommended for wilderness designation (see Alternative 2 Map). This alternative emphasizes the preservation of identified wilderness values over the production of other resources which are or may be present in the study area.

The following summary by resource details the direction management would take if this alternative were selected.

### Management Direction for Lands Recommended for Wilderness

The 26,371 acres of public lands will be managed under the BLM's Wilderness Management Policy, and the 4,474 acres managed by the Beaverhead National Forest and the 42,040 acres managed by the Targhee National Forest will be administered under the Forest Service Wilderness Policy.

**Recreation**. Under this alternative, 16.5 miles of vehicle ways would be closed to vehicle use. Six cherry-stemmed roads totaling 10.5 miles would remain open to hunting, fishing, and other recreation access. Access to the Sheep Station will be maintained. The entire study area would be closed to snowmobiles. No facilities for visitor use and safety would be constructed.

**Wildlife Habitat**. About 13,200 acres of important elk late fall and migrational staging habitat and 3,600 acres of elk winter habitat would remain undisturbed from timber harvest and mineral development. About 72,885 acres occasionally visited by the grizzly bear and 30,845 acres of drainage into offsite and onsite aquatic habitat would remain undisturbed from development activities for the long term. Wildlife and fish habitat projects would be implemented only to enhance wilderness character or the habitat of a threatened or endangered species. Construction of stream structures to support the reestablishment of endemic west slope cutthroat on 14 miles of stream would probably not be initiated unless it could be done using nonmotorized methods. South of the Divide, 25,300 acres will be managed as Situation 2 grizzly bear habitat according to the *Grizzly Bear Guidelines* (USDI, FWS 1986). No wildlife or grizzly bear habitat improvement projects will be undertaken on National Forest lands.

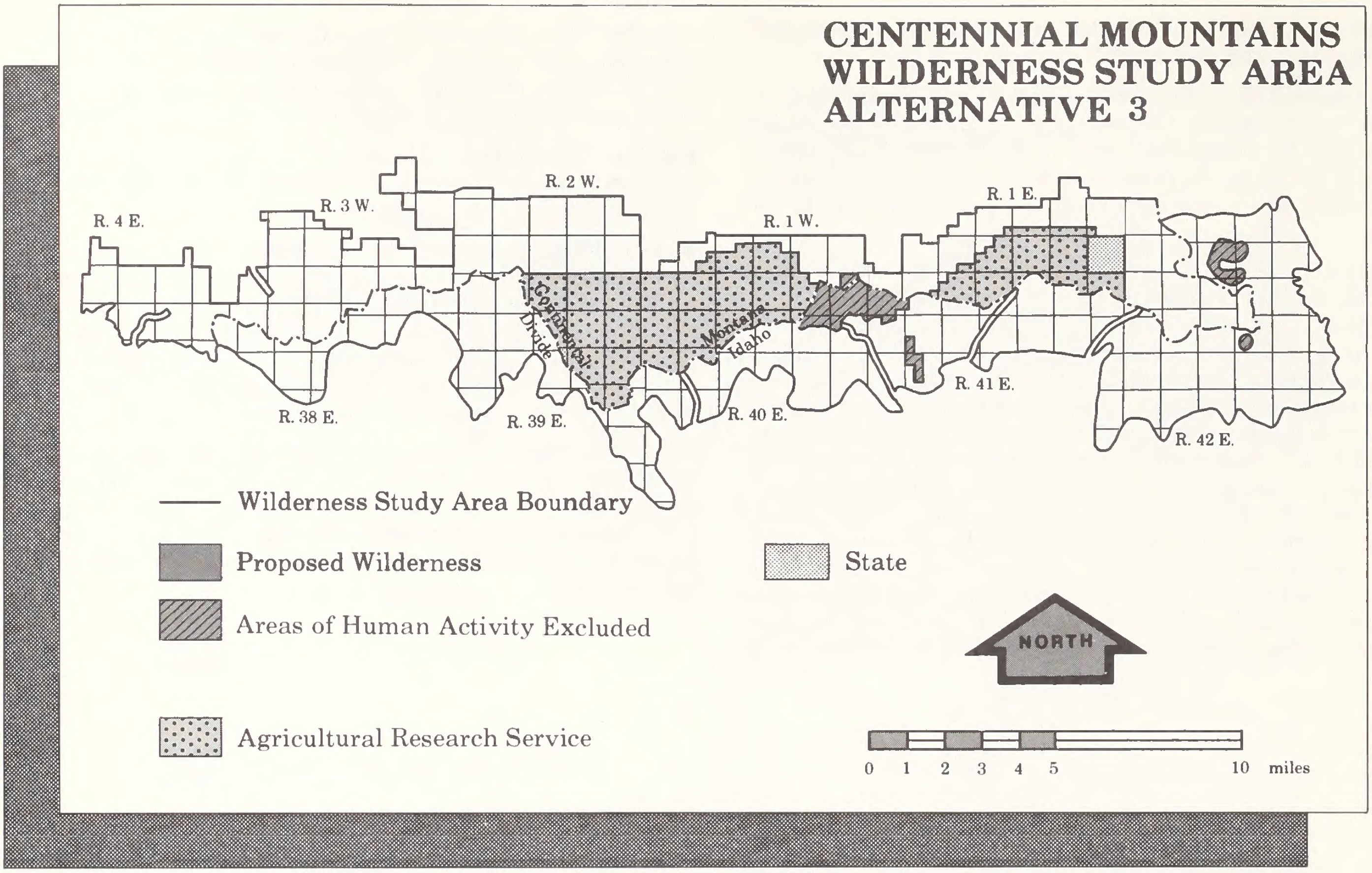
The introduction of mountain goats was recommended on public lands in the Centennials. However, this project would not be compatible with a wilderness designation because the goats may not be native to the area and motorized vehicles or helicopters would be needed to bring in the goats.

**Range Resources**. Livestock grazing will be managed with an emphasis on protection of the natural integrity of the study area. The existing 2,440 AUMs of use would continue for the foreseeable future. The ongoing encroachment of the forest would likely decrease the forage for grazing by an unquantifiable amount in the long term. A fire management policy that allows fires to burn uncontrolled would tend to offset forest encroachment and open holes in the canopy. The construction of planned structural improvements including fences and spring developments using nonmotorized methods would be allowed. Under these restrictions, no range construction will be likely south of the Divide. In the Peet Creek allotment north of the Divide, one-half mile of fence would probably be constructed using nonmotorized means. The maintenance of 18 miles of existing fencelines, five spring and lake developments, and one Soil Conservation Service (SCS) snow course would continue; nonmotorized transportation is being used at present to maintain these developments.

**Timber Resources**. No timber harvest would be allowed in the study area. Insects or diseases may be controlled if resources outside the wilderness are threatened.

**Mineral and Energy Development**. No new mineral claims or leases would be allowed, although valid existing claims will be honored until they expire. Continued development of the phosphate resource will be allowed. The decorative rock claim south of the Continental Divide will continue operations and will eventually involve development on the 80 acres of the claim inside the study area.

**Unstable Soils**. Current soil stability and water quality with existing levels of sediment would remain unchanged on 35,303 acres of unstable soils. The maintenance of the watershed stabilization projects on the Targhee National Forest lands would be precluded because motorized equipment is used.



## Alternative 3

### Wilderness Recommendation

Alternative 3 recommends no part of the 72,885 acres in the Centennial Study Area be designated as wilderness (see Alternative 3 Map). This alternative emphasizes other resource values over preservation of the identified wilderness values. If Congress selects this alternative, existing guidance in the management plans would govern the management of the study area.

### Management Direction for Lands Managed by the Beaverhead National Forest

Lands within the study area managed by the Beaverhead National Forest and not recommended for wilderness (4,474 acres) will be managed according to the *Forest Plan* (USDA, FS 1986b). The Forest Plan places the study area into Management Area 1. In summary, this direction will maintain existing opportunities for using the resources found within the study area, managing them in a custodial role with a low level of investment.

**Recreation.** No developed recreation facilities will be constructed; however, toilet facilities may be installed in areas suffering resource degradation. Recreation opportunities will be provided in the semiprimitive, nonmotorized and semiprimitive, motorized Recreation Opportunity Spectrum categories. No maintained public access presently exists for motorized vehicles. Snowmobile use will be allowed in winter.

**Wildlife Habitat.** Wildlife habitat and fisheries habitat improvement projects generally would not be developed unless needed to correct existing habitat degradation.

**Range Resources.** Low intensity, custodial management of livestock grazing will continue. Existing range improvements will be maintained. New improvements will be allowed as needed to facilitate management of adjacent areas or developed only to protect existing resource values.

**Timber Resources.** Timber harvest will not be scheduled. Salvage harvest may be permitted to prevent the spread of disease and insect infestations.

**Mineral and Energy Development**. Most of the study area would be available for mineral exploration and leasing. Exploration and development activities will be guided by Forest-wide standards and guidelines.

**Unstable Soils**. All projects affecting the watershed resource will incorporate Best Management Practices into project design and implementation.

The full text of the direction for Management Area 1 taken from the *Forest Plan* is contained in Appendix B.

### Management Direction for Lands Managed by the Targhee National Forest

Lands within the study area managed by the Targhee National Forest and not recommended for wilderness (42,040 acres) will be managed according to the *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b). The Land Management Plan places the study area into Management Area 5. In summary, this will result in the area remaining essentially undeveloped as described below.

**Recreation**. No developed recreation sites will be constructed. Recreation opportunities will be provided in the semiprimitive, nonmotorized Recreation Opportunity Spectrum category. Snowmobiles will be allowed in winter. East Dry Creek and Keg Springs roads will remain open.

**Wildlife Habitat**. The study area will be managed for an increasing elk population and for slightly more than existing elk security cover. The 25,300 acres delineated as Situation 2 grizzly bear habitat will be managed according to the *Grizzly Bear Guidelines* (USDI, FWS 1986). Wildlife and fisheries habitat improvement projects are not planned in the near future.

**Range Resources**. Livestock grazing will be managed for a small increase in use and an improvement in range condition. Range improvements will be constructed where cost effective. Livestock grazing in riparian areas will be managed to prevent damage to streams.

**Timber Resources**. No timber harvest is planned.

**Mineral and Energy Development**. Most of the study area would be available for mineral exploration and leasing. Special stipulations will be attached to all mineral leases to protect specific resources. Stipulations prohibiting surface occupancy will be attached to leases on some environmentally sensitive sites. The Tin Cup building stone claim will be administered under existing regulations. Exploration and development will be guided by Forest-wide standards and guidelines.

**Unstable Soils**. Watershed stabilization projects (contour furrowing) will be maintained. Rate of soil erosion will depend on amounts of mineral activity. East Dry Creek Road and Keg Springs Road will be reconstructed to prevent degradation of the soil and water resource. Best Management Practices will be used in conjunction with all activities.

The full text of the direction for Management Area 5 taken from the *Land Management Plan for the Targhee National Forest* is contained in Appendix C.

### Management Direction for Lands Managed by the Bureau of Land Management

Lands within the study area managed by the Bureau of Land Management and not recommended for wilderness (26,371 acres) will be managed according to the *Dillon Resource Area Management Framework Plan* (USDI, BLM 1979). The direction for the study area is outlined in a number of sections in the Management Framework Plan. In summary, that direction will result in timber harvest and mineral exploration west of Matsingale Creek and maintain the roadless nature of public lands east of Matsingale Creek.

**Recreation**. The study area from Matsingale Creek to the east end of the Centennial Mountains will be managed as roadless. Motorized vehicles would be excluded in this section. The trail alignment and management plan for the Continental Divide trail will be developed. Vehicle access in the study area west of Matsingale Creek will be managed according to the Interagency Travel Plan for Southwest Montana. Currently 3,860 acres are open to vehicle access from May 1 through December 1.

**Wildlife Habitat**. The study area will be considered for designation as an Area of Critical Environmental Concern for the protection of the habitat of species listed in Table 2-2.

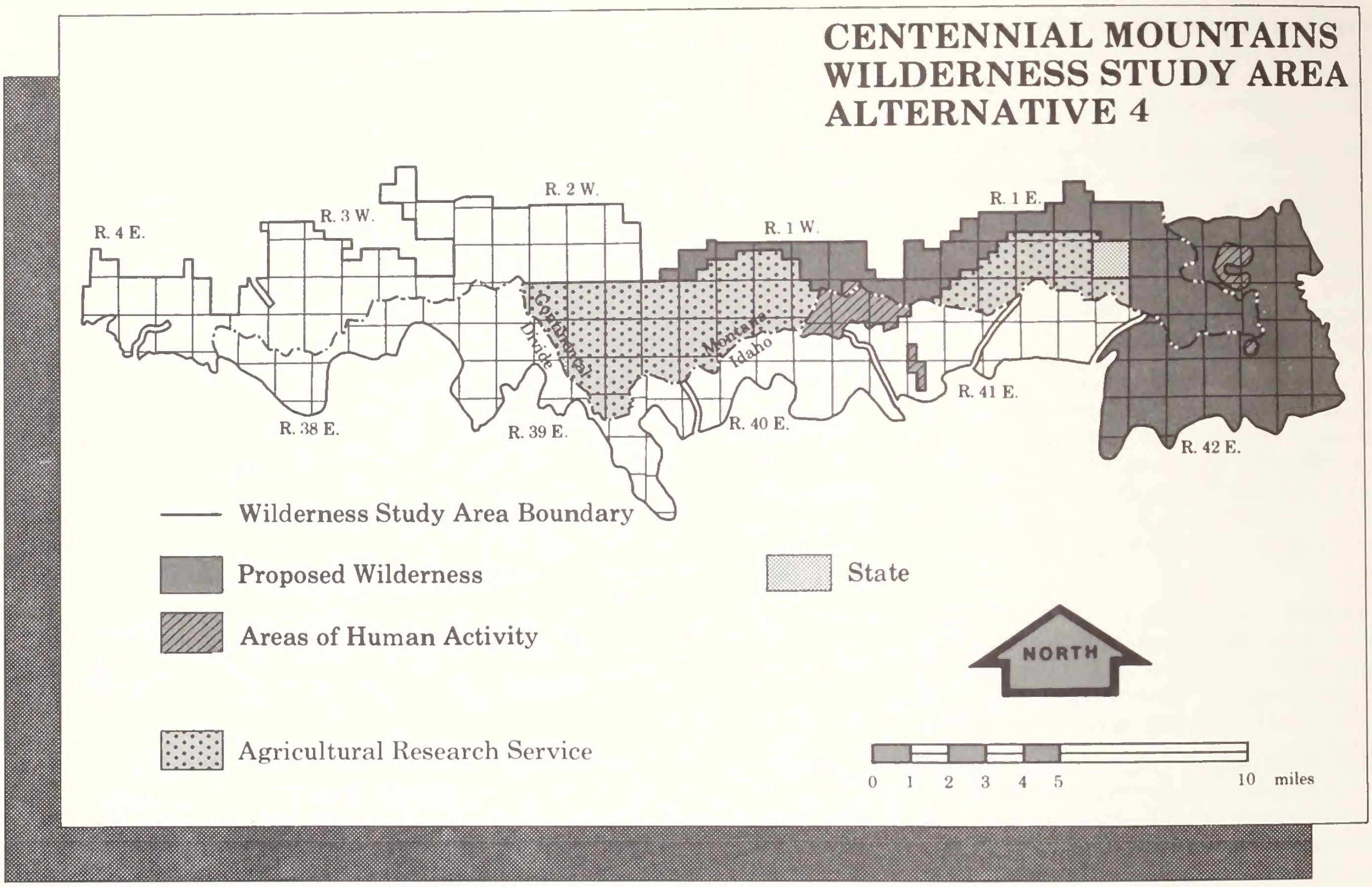
**Range Resources**. On public lands, livestock grazing will be managed to protect other resources such as water quality and riparian habitat. If these resources show damage from livestock grazing, changes will be made in livestock use. These changes may be in season of use, grazing systems, or number of livestock.

**Timber Resources**. Timber harvest will be excluded east of Matsingale Creek. Peet Creek Timber Sale is planned for harvest and other timber harvest may be scheduled in the future on 13,200 acres of suitable forest land. The Montana Cooperative Elk Logging Study recommendations (USDA, FS 1982) including any future revisions will be followed.

**Mineral and Energy Development**. Management direction will prohibit surface occupancy of mineral leases and withdraw the area east of Matsingale Creek from location of mineral claims. Standard minerals management procedures will occur west of Matsingale Creek. Protection of the Centennial Range fault escarpment which is of considerable geologic scientific significance is proposed.

**Unstable Soils**. Sites of existing or potential mass failure of soils will be considered for designation as Areas of Critical Environmental Concern. Special mitigative measures will be applied to any projects to prevent mass failure of soils.

The full text of the direction for the public lands in the Centennial Mountains taken from the *Dillon Resource Area Management Framework Plan* is contained in Appendix D.



## Alternative 4

### Wilderness Recommendation

Alternative 4 recommends 11,136 acres north of the Continental Divide and 15,483 acres south of the Divide for a total of 26,619 acres suitable for wilderness designation. As shown on the Alternative 4 Map, the lands lie east of Section 36, T. 14 S., R. 2 W. in Montana and east of Tin Cup Road in Idaho and are the eastern most portion of the study area.

Much of the northern boundary is adjacent to the Red Rock Lakes National Wildlife Refuge with the remainder bordering privately owned land. To the south is land withdrawn for the Sheep Station. Targhee National Forest lands form the border to both the south and east in Idaho.

This alternative recommends most of the highest mountains overlooking the Centennial Valley for wilderness designation. The Sheep Station and phosphate mining area around Taylor Mountain are outside the boundaries of this alternative; however, the two watershed terracing projects are inside the boundary. A total of 46,266 acres are not recommmended for wilderness.

The following summary details the direction management would take if this alternative were selected. Management direction for portions of the area recommended for wilderness will be detailed separately from management direction for portions not recommended for wilderness.

### Management Direction for Lands Recommended for Wilderness

The 6,662 acres of public land will be managed under the BLM's Wilderness Management Policy. The 4,474 acres managed by the Beaverhead National Forest and the 15,483 acres managed by Targhee National Forest will be administered under the Forest Service Wilderness Management Policy.

Management of lands recommended for wilderness would be similar to Alternative 1. The notable exceptions would be that 13,200 acres of elk fall and migrational habitat will be disturbed by logging. Aquatic habitat watershed that would remain undisturbed would decrease to 16,974 acres. Stream structures to improve west slope cutthroat trout habitat on four miles of stream will be constructed using only nonmotorized forms of transportation. Range improvements planned for the Idaho allotments and water stabilization projects will not be constructed.

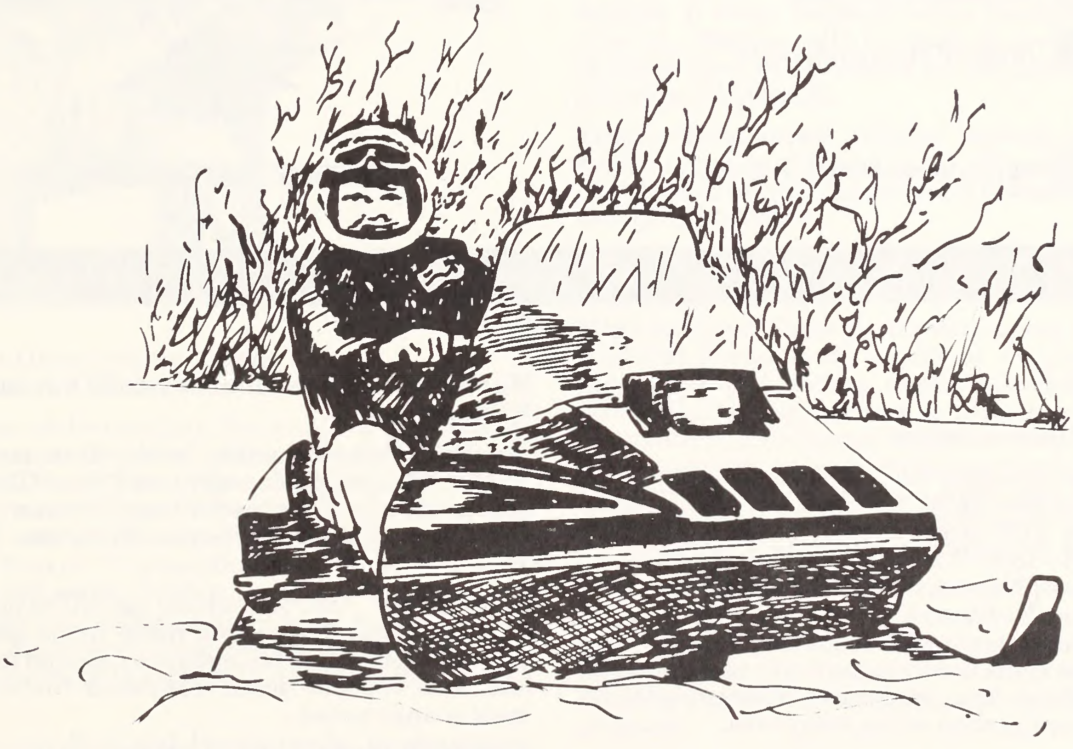
The 26,619 acres recommended for wilderness is occasionally visited by the grizzly bear and will remain undisturbed. A total of 15,483 acres recommended for wilderness south of the Divide will be managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986). No wildlife or grizzly bear habitat improvement projects will be undertaken on National Forest lands.

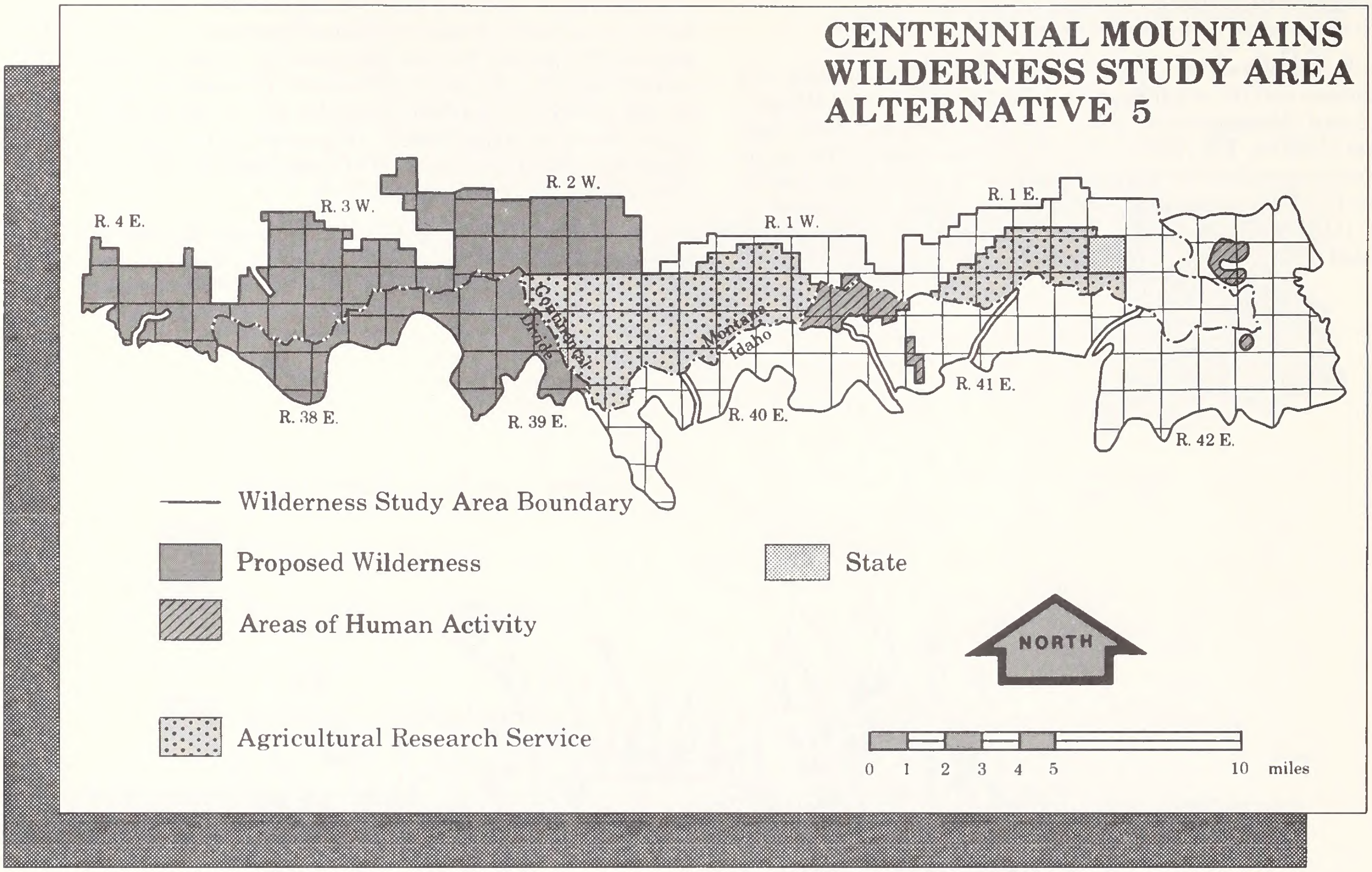
### Management Direction for Lands Not Recommended for Wilderness

The 26,557 acres of Targhee National Forest lands not recommended for wilderness will be managed according to the *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b). The 19,709 acres of public land not recommended for wilderness will be managed according to the *Dillon Resource Area Management Framework Plan* (USDI, BLM 1979). The management direction is detailed in Appendix C and D respectively.

Management of these lands would be similar to management of nonwilderness lands in Alternative 1. The notable exceptions would be the increase in lands available for timber harvest. About 13,200 acres of suitable timber land in the northwest portion could be harvested over the long term. Stream structures to improve west slope cutthroat trout habitat on ten miles of stream and fences in the Price Peet allotment are planned.

South of the Divide, 9,817 acres would be managed as Situation 2 habitat for grizzly bears in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986).





## Alternative 5

### Wilderness Recommendation

Alternative 5 recommends for wilderness designation 19,709 acres west of Section 36, T. 14 S., R. 2 W. in Montana. Also included are 9,555 acres west of the head of Scalp Creek in Idaho for a total of 29,264 acres. Private land and the Red Rock Lakes National Wildlife Refuge border the lands to the north. The Sheep Station along with Targhee National Forest lands and public lands managed for nonwilderness uses form the border to the south and west. (See Alternative 5 Map.) The wilderness recommendation includes the western portion of the study area.

This alternative includes the lower elevation, more heavily forested lands overlooking the west side of the Centennial Valley. The boundary excludes the Sheep Station and mineral development areas. A total of 43,621 acres are not recommended for wilderness in this alternative.

The following summary by resource details the direction management would take if this alternative were selected. Management direction for portions of the alternative recommended for wilderness will be detailed separately from management direction for portions not recommended for wilderness.

### Management Direction for Lands Recommended for Wilderness

The 19,709 acres of public land will be managed under BLM's Wilderness Management Policy. The 9,555 acres managed by the Targhee National Forest will be administered under the Forest Service Wilderness Management Policy.

**Recreation.** Off road vehicle use will be prohibited. The Price Peet and Bean Creek roads would still be open to spring, summer, and fall motorized use and the Odell Creek haul road would be closed year-round. No facility development is anticipated.

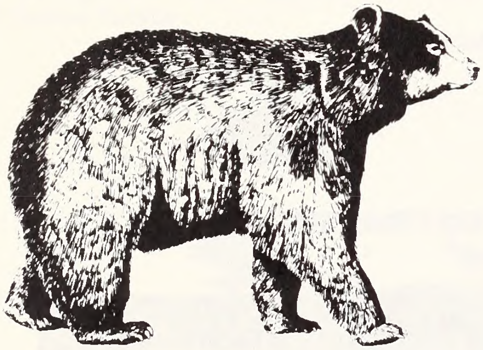
**Wildlife Habitat.** The 13,200 acres of important elk late fall and migrational staging habitat on the west side would remain undisturbed by development activities along with 3,600 acres of elk winter habitat. About 30,845 acres of drainage into offsite and onsite aquatic habitat would remain undisturbed by development activities. Construction of stream structures in support of west slope cutthroat trout would be permitted on five miles of stream using only nonmotorized means of transportation. No wildlife or grizzly bear habitat improvement projects will be undertaken on Targhee National Forest lands. The 29,264 acres recommended for wilderness is occasionally visited by the grizzly bear and will be managed in an undeveloped state.

**Range Resources.** Livestock grazing will continue at present levels. Construction of the one-half mile of fence in the Price Peet allotment would depend on the use of nonmotorized equipment. Some range improvements necessary to support livestock grazing in the wilderness recommended portion south of the Divide would not occur under wilderness management.

**Timber Resources**. No timber will be harvested on the lands recommended for wilderness.

**Mineral and Energy Development**. No new mineral claims or leases would be allowed on the lands designated as wilderness. Existing leases could be explored until expiration under stipulations designed to protect the wilderness resource. If a mineral resource were discovered, development could occur without regard to wilderness values as long as there was no degradation to the environment.

**Unstable Soils**. No projects for soil stabilization will occur. Water quality and sediment levels will be influenced only by natural events. The only development activity that could occur on unstable soils is minerals or energy lease exploration and development.



### Management Direction for Lands Not Recommended for Wilderness

The 4,474 acres of Beaverhead National Forest lands in Montana not recommended for wilderness will be managed according to the *Forest Plan* (USDA, FS 1986b). The 32,485 acres of Targhee National Forest lands in Idaho not recommended will be managed according to the *Land Management Plan for Targhee National Forest* (USDA, FS 1985b). The 6,662 acres of public lands not recommended will be managed according to the *Dillon Resource Area Management Framework Plan* (USDI, BLM 1979). The management direction is detailed in Appendix B, C, and D respectively.

**Recreation**. On National Forest lands, no developed recreation facilities will be constructed; however, toilet facilities may be installed in areas suffering resource degradation. Recreation opportunities will be provided in the semiprimitive, nonmotorized and semiprimitive, motorized Recreation Opportunity Spectrum categories, but motorized vehicles will be allowed on specific designated routes in summer. Snowmobiles will be allowed in winter.

The public lands from Matsingale Creek to the east end of the Centennial Mountains will be managed as roadless. Motorized vehicles would be excluded in this section. The trail alignment and management plan for the Continental Divide trail will be developed.

**Wildlife Habitat**. The Targhee National Forest lands will be managed for an increasing elk population and for slightly more than existing elk security cover. The amount of cover will not change significantly on Beaverhead National Forest lands as no timber sales are planned. A total of 25,300 acres in Idaho delineated as Situation 2 grizzly bear habitat will be managed according to the *Grizzly Bear Guidelines* (USDI, FWS 1986). No wildlife habitat and fisheries habitat improvement projects will be developed unless needed to correct habitat degradation.

The public lands will be considered for designation as an Area of Critical Environmental Concern for the protection of the habitat of species listed in Table 2-2.

**Range Resources**. On Beaverhead National Forest lands, low intensity, custodial management of livestock grazing will be maintained. On Targhee National Forest lands, existing range improvements will be maintained and new projects will be developed only to protect resource values; livestock grazing will be managed for a small increase in use and an improvement in range condition. Range improvements will be constructed where cost effective. Livestock grazing in riparian areas will be managed to prevent streamside damage.

On public lands, livestock grazing will be managed to protect other resources such as water quality and riparian habitat. If these resources show damage from livestock grazing, changes will be made in livestock use. These changes may be in season of use, grazing systems, or numbers of livestock.

**Timber Resources**. Timber harvest will not be scheduled on National Forest lands. Salvage harvest may be permitted to prevent the spread of disease and insect infestations in Montana.

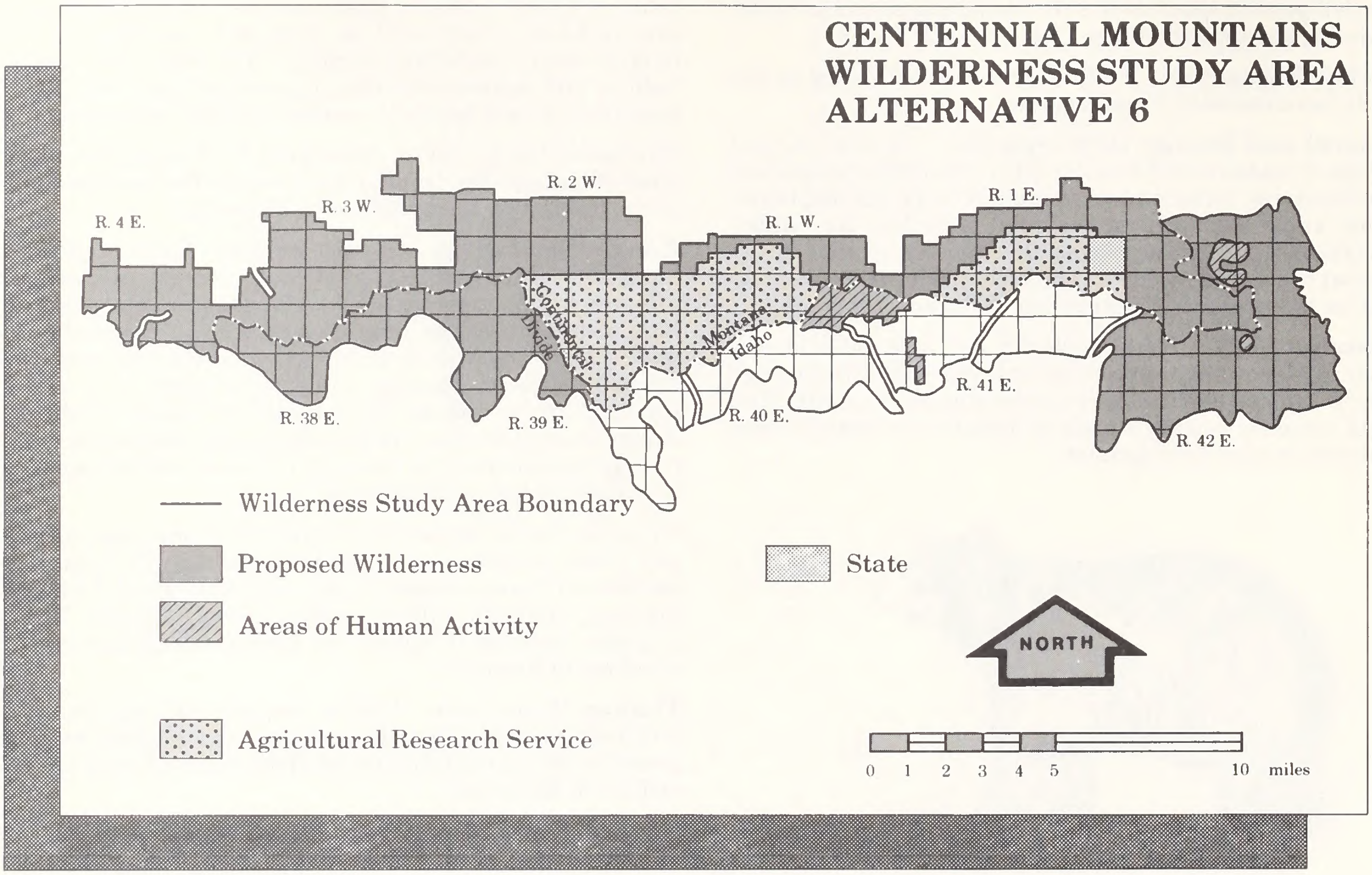
On public lands, timber harvest will be excluded east of Matsingale Creek.

**Mineral and Energy Development**. Most of the National Forest lands would be available for mineral exploration and leasing. Special stipulations will be attached to all mineral leases to protect specific resources. Stipulations prohibiting surface occupancy will be attached to leases on some environmentally sensitive sites. The Tin Cup building stone claim will be administered under existing regulations. Exploration and development will be guided by Forest-wide standards and guidelines.

On public lands, management direction will prohibit surface occupancy of mineral leases and withdraw the area east of Matsingale Creek from location of mineral claims. Protection of the Centennial Range fault escarpment which is of considerable geologic scientific significance is proposed.

**Unstable Soils**. All projects affecting the watershed resource on National Forest lands will incorporate Best Management Practices into project design and implementation. Watershed stabilization projects (contour furrowing) will be maintained. Rate of soil erosion will depend on amounts of mineral activity. East Dry Creek and Keg Springs roads will be reconstructed to prevent degradation of the soil and water resource.

On public lands, sites of existing or potential mass failure of soils will be considered for designation as Areas of Critical Environmental Concern. Special mitigative measures will be applied to any projects to prevent mass failure of soils.

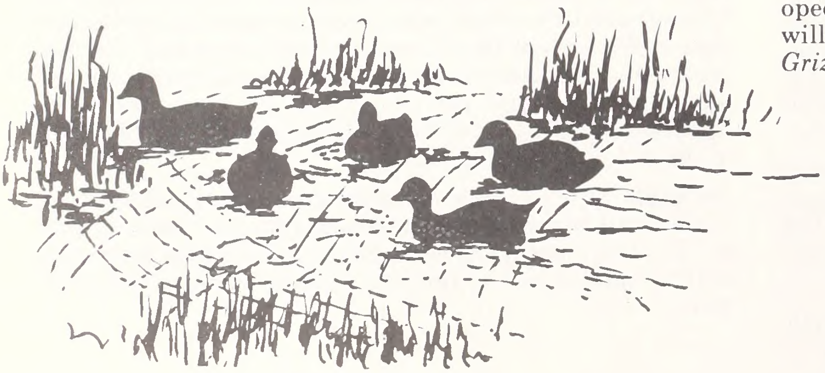


## Alternative 6

### Wilderness Recommendations

Alternative 6 recommends 55,883 acres for wilderness designation. (See Alternative 6 Map). This alternative includes all the lands recommended for wilderness in both Alternatives 4 and 5. A total of 17,002 acres in Idaho between the head of Scalp Creek and Tin Cup Road are not recommended for wilderness.

The following summary details the direction management would take if this alternative were selected. Management direction for portions of the alternative recommended for wilderness will be detailed separately from management direction for portions not recommended for wilderness.



### Management Direction for Lands Recommended for Wilderness

The 26,371 acres of public lands will be managed under BLM's Wilderness Management Policy, and the 4,474 acres managed by the Beaverhead National Forest and the 25,038 acres managed by the Targhee National Forest will be managed under the Forest Service Wilderness Management Policy.

Management of lands recommended for wilderness would be similar to Alternative 2, the All Wilderness Alternative. The notable exceptions include a slight reduction to 70,064 acres of elk summer range.

The 55,883 acres recommended for wilderness is occasionally visited by the grizzly bear and will remain undeveloped. A total of 15,483 acres recommended for wilderness will be managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986).

### Management Direction for Lands Not Recommended for Wilderness

The 17,002 acres of Targhee National Forest lands not recommended for wilderness will be managed according to the *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b). The management direction is detailed in Appendix C.

**Recreation**. No developed sites will be constructed. Recreation opportunities will be provided in the semiprimitive, nonmotorized Recreation Opportunity Spectrum category. Snowmobiling will be allowed in winter. East Dry Creek and Keg Springs roads will remain open.

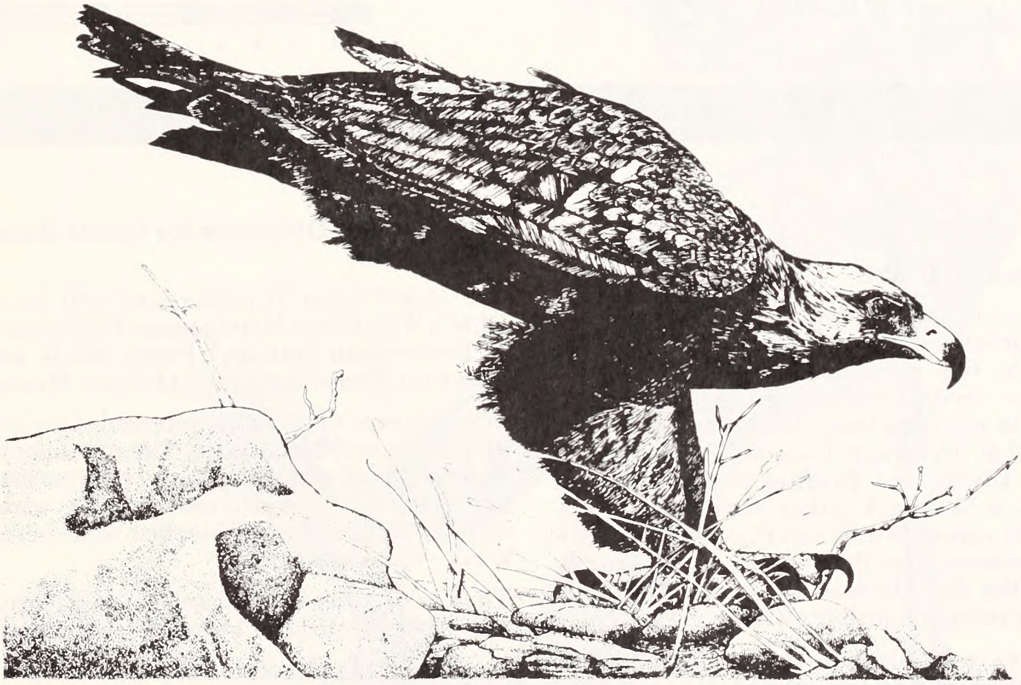
**Wildlife Habitat**. The Targhee National Forest lands will be managed for an increase in elk population and a small increase in elk security cover. A total of 9,817 acres not recommended for wilderness will be managed according to the *Grizzly Bear Guidelines* (USDI, FWS 1986). No projects are planned in the near future to improve wildlife and fisheries habitat.

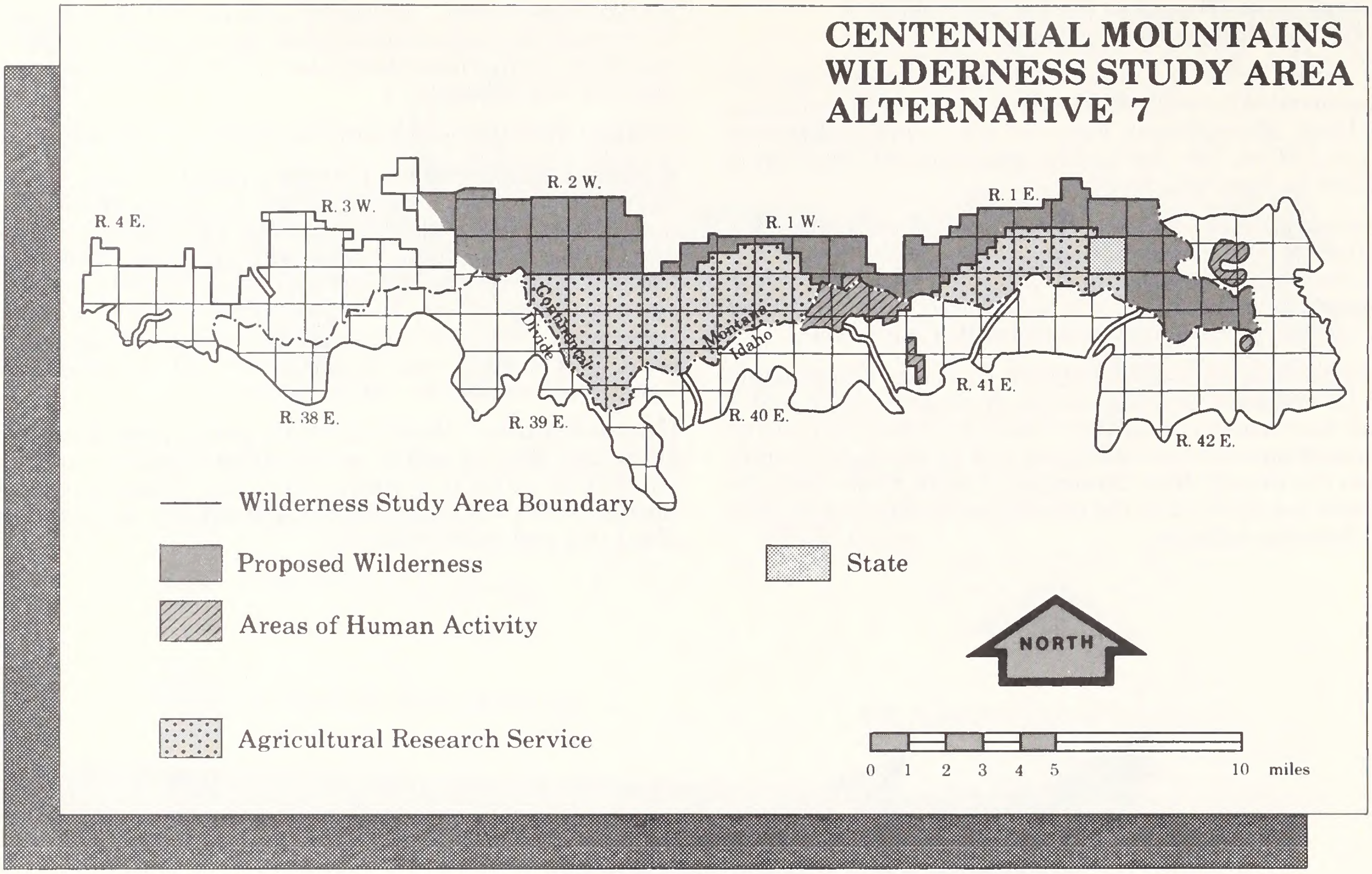
**Range Resources**. Livestock grazing will be managed for a small increase in use and an improvement in range condition. Range improvements will be constructed where they are cost effective.

**Timber Resources**. No timber harvest is planned.

**Mineral and Energy Development**. Most of the Targhee National Forest lands will be available for mineral exploration and leasing. Special stipulations will be attached to all mineral leases to protect specific resources. Stipulations prohibiting surface occupancy will apply to some environmentally sensitive sites. The Tin Cup building stone claim will be administered under existing regulations. Exploration and development will be guided by Forest-wide standards and guidelines.

**Unstable Soils**. Watershed stablization projects will be permitted. Rate of soil erosion will be dependent on the amount of mineral activity. East Dry Creek and Keg Springs roads will be reconstructed to prevent degradation of the soil and water resource.





## Alternative 7

### Wilderness Recommendation

Alternative 7 recommends for wilderness designation 18,067 acres in Montana. This alternative will assure that the watershed of the Red Rock Lakes National Wildlife Refuge will remain undisturbed. Clean, unsedimented water is essential for grayling trout, the trumpeter swan, and other waterfowl at the refuge. The southern boundary is the Continental Divide and Targhee National Forest lands, to the north is Red Rock Lakes National Wildlife Refuge and privately owned lands; and the eastern border is the boundary between the Beaverhead and Targhee National Forests. (See the Alternative 7 Map.) A total of 54,818 acres are not recommended for wilderness.

The following summary details the direction management would take if this alternative were selected. Management direction for portions of the alternative recommended for wilderness will be detailed separately from management direction for portions not recommended for wilderness.

### Management Direction for Lands Recommended for Wilderness

The 13,593 acres of public land will be managed under BLM's Wilderness Management Policy, and the 4,474 acres of Beaverhead National Forest lands will be managed under the Forest Service Wilderness Management Policy.

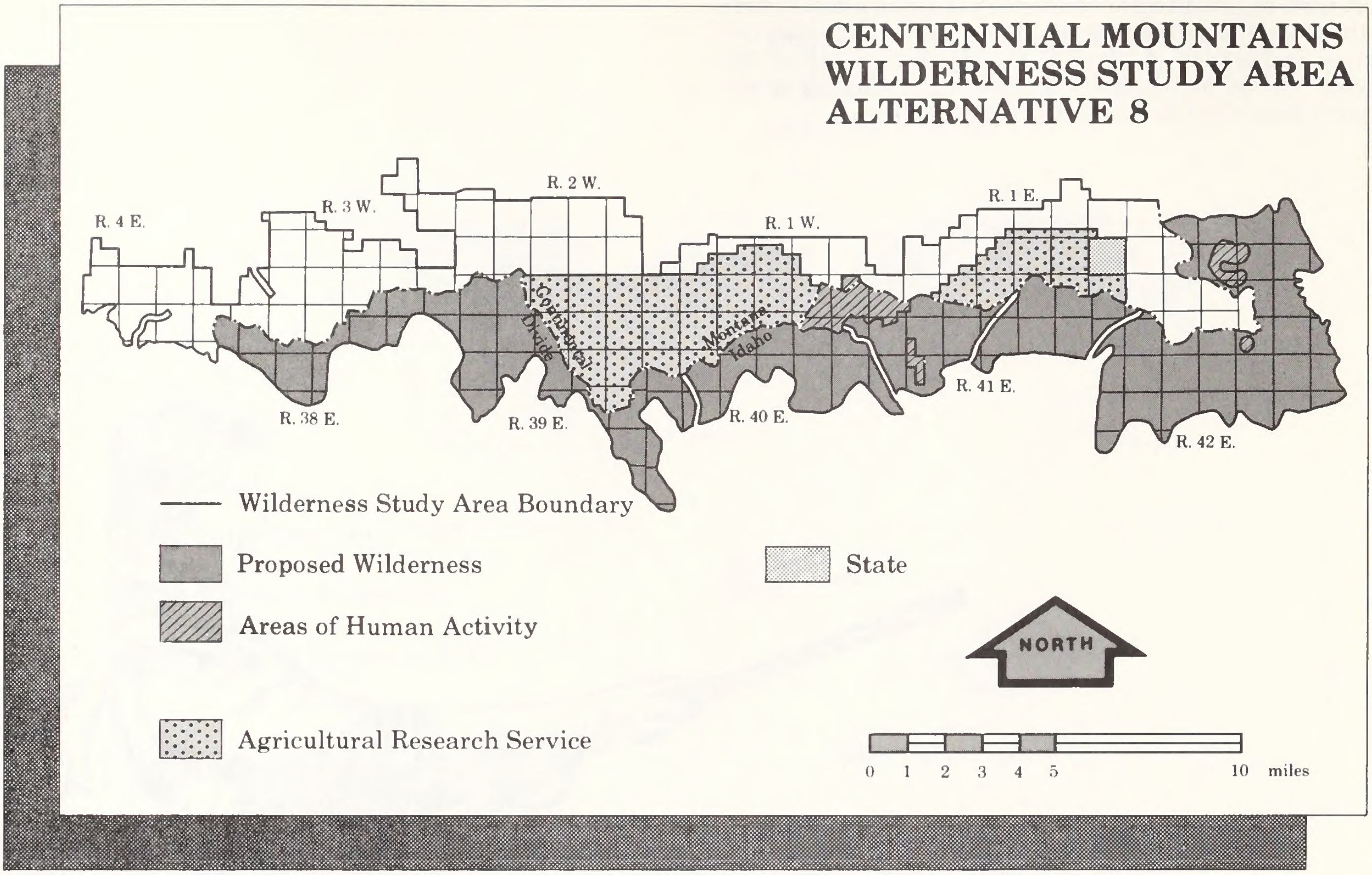
Management of lands recommended for wilderness would be similar to Alternative 1. The notable exceptions would be that elk fall and migrational habitat that would remain undisturbed would decrease to 1,700 acres; and aquatic habitat watershed undisturbed would decrease to 18,067 acres.

The 18,067 acres recommended for wilderness is occasionally visited by grizzly bears and will remain undeveloped.

### Management Direction for Lands Not Recommended for Wilderness

The 42,040 acres of Targhee National Forest lands not recommended for wilderness will be managed according to the *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b). The 12,778 acres of public land not recommended will be managed according to the *Dillon Resource Area Management Framework Plan* (USDI, BLM 1979). The management direction is detailed in Appendix C and D respectively.

Management of public lands would be similar to management of nonwilderness lands in Alternative 1. The notable exceptions would be the increase in lands available for timber harvest. About 11,700 acres of timber in the northwest portion could be harvested over the long term. Fences in the Price Peet allotment could be constructed using motorized equipment. A total of 25,300 acres south of the Divide will be managed as Situation 2 according to the *Grizzly Bear Guidelines* (USDI, FWS 1986).



## Alternative 8

### Wilderness Recommendation

Alternative 8 recommends for wilderness designation 42,040 acres of Targhee National Forest lands to the south of the Continental Divide in Idaho. To the north the boundary is the Continental Divide; to the south and east other nonwilderness Targhee National Forest lands form the boundary; and public lands form the western boundary. Most of the impacts from development activity in the Centennial Mountain range would be either included in or immediately adjacent to the area recommended for wilderness. The high peaks which form the southern border of the Centennial Valley would not be included. (See the Alternative 8 Map.) A total of 30,845 acres are not recommended for wilderness.

The following summary by resource details what direction management would take if this alternative were selected. Management direction for portions of the alternative recommended for wilderness will be detailed separately from management direction for portions not recommended for wilderness.

### Management Direction for Lands Recommended for Wilderness

The 42,040 acres managed by the Targhee National Forest will be managed under the Forest Service Wilderness Management Policy.

**Recreation**. Four access roads south of the Continental Divide will remain open, maintaining specific access to the Sheep Station, the phosphate lease, and the decorative building stone claim. All are prior existing rights which have been excluded from the study area. Snowmobile use will be prohibited. Odell Creek haul road would probably still be closed to vehicle use in the summer and open to snowmobile use in the winter, although closure of the Targhee National Forest lands would decrease interest in the route. No recreation facilities are planned.

**Wildlife Habitat**. Wildlife habitat would remain undisturbed by development activities. This would include 38,490 acres of elk summer range.

The 42,040 acres recommended for wilderness is occasionally visited by the grizzly bear. It contains 25,300 acres managed as Situation 2 according to the *Grizzly Bear Guidelines* (USDI, FWS 1986). No wildlife and grizzly bear habitat projects will be undertaken.

**Range Resources**. Livestock grazing will continue at current levels. No range improvement projects to increase livestock forage would be constructed south of the Divide except as would be compatible with the wilderness recommendation, and necessary to protect wilderness values and maintain grazing use.

**Timber Resources**. No timber would be harvested.

**Mineral and Energy Development**. No new mineral claims or leases would be allowed on the lands designated as wilderness. Existing leases could be explored under stipulations designed to protect the wilderness resource until the leases expire. Development could occur without regard to wilderness values as long as there was no undue degradation to the environment.

**Unstable Soils**. No new projects for soil stabilization will occur. Motorized maintenance of the watershed stabilization projects would be precluded.

### Management Direction for Lands Not Recommended for Wilderness

The 4,474 acres of Beaverhead National Forest lands not recommended for wilderness will be managed according to the *Forest Plan* (USDA, FS 1986b). The 26,371 acres of public lands not recommended for wilderness will be managed according to the *Dillon Resource Area Management Framework Plan* (USDI, BLM 1979). The management direction is detailed in Appendix B and D respectively.

Management of the lands not recommended for wilderness are summarized in Alternative 3 under the following headings:

> Management Direction for Lands Managed by the Beaverhead National Forest.
>
> Management Direction for Lands Managed by the Bureau of Land Management.

# ALTERNATIVES CONSIDERED BUT NOT RECOMMENDED FOR DETAILED STUDY

## Inclusion of the Sheep Station

The two blocks of land managed by the Department of Agriculture's Sheep Experiment Station have not been included in any of the alternatives. Approximately 16,650 acres in the Sheep Station in the Centennial Mountains were withdrawn for agricultural experiments by a series of Presidential Executive Orders and were assigned to the sole administration of the Secretary of Agriculture to carry on those purposes by a rider on the Agriculture and Food Act of 1981 (section 1447 of S. 884). Neither the BLM nor the Forest Service has jurisdiction or authority to conduct wilderness studies of this land.

## Inclusion of the BLM Primitive Area Alone

The lands included in the BLM primitive area are embodied in Alternative 1, the proposed action, which combines the primitive area with the Beaverhead National Forest portion. The inclusion of Beaverhead lands makes no significant change in evaluating the primitive area's suitability for wilderness designation and the impacts on nonwilderness resources remains essentially the same. Therefore the BLM primitive area alternative will not be analyzed separately.

## Inclusion of the Public Lands Acquired in the First Continental Land Exchange in 1985

Approximately 3,070 acres bounded by the Lakeview to Monida Road and the Price Peet Road were acquired in the BLM's First Continental Land Exchange which totaled 7,532 acres (USDI, BLM 1984b). These lands are intermixed with 1,500 acres of existing public lands, and the entire 4,570-acre unit is contiguous to the Centennial Study Area. During the 1982 inventory of the Centennial Mountains, 1,024 acres of the above mentioned public lands contiguous to the study area were excluded from the study because of development activities that adversely affected the naturalness of that portion. Some of the newly acquired lands are also adjacent to the 1,024 acres dropped after the 1982 inventory. The majority of these newly acquired lands, however, were not fully reviewed for wilderness characteristics. The federal government previously owned all minerals, and some portions of these lands are currently leased for oil and gas.

On March 16, 1982, the Associate Solicitor issued an opinion that BLM was under no mandatory duty to review acquisitions for wilderness values and in fact was prevented from doing so. A clarifying solicitor's opinion dated August 30, 1985, concluded that the BLM had discretionary authority to study acquired lands for wilderness under Section 202 of the Federal Land Policy and Management Act.

Under this mandate the BLM conducted an intensive field inventory of wilderness characteristics in all 4,570 acres of public land east of Price Peet Road and south of the Lakeview to Monida Road. The results of this inventory are displayed in Appendix J of this document.

As these lands lack outstanding opportunities for solitude or a primitive and unconfined type of recreation and are segmented by roads, they will not be further considered for wilderness.

# SUMMARY OF IMPACTS

Table 2-3 summarizes the impacts of the proposed action and alternatives for the Centennial Mountains Wilderness EIS.

## TABLE 2-3
## SUMMARY OF IMPACTS OF THE ALTERNATIVES FOR THE CENTENNIAL MOUNTAINS WILDERNESS EIS

| RESOURCE | EFFECT | PROPOSED ACTION 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Wilderness Values | Number of acres in the Centennial Mts. where scenic and wilderness values will remain undisturbed over the long term. | 26,248 | 72,885 | 0 | 26,619 | 29,264 | 55,883 | 18,883 | 42,040 |
| Recreation Activities and Use Levels | Number of acres where primitive recreation values will remain undisturbed. | 26,248 | 72,885 | 0 | 26,619 | 29,264 | 55,883 | 18,067 | 42,040 |
| | Number of snowmobiling visitor days of use. | 496 | 0 | 596 | 356 | 476 | 236 | 435 | 181 |
| | Number of snowmobiling visitor days lost. | 100 | 596 | 0 | 240 | 120 | 360 | 161 | 415 |
| | Percent of snowmobiling lost. | 17 | 100 | 0 | 40 | 20 | 60 | 27 | 70 |
| | Number of hunter visitor days lost.[1] | 0 | 0 | 200 | 200 | 0 | 0 | 200 | 200 |
| | Percent of hunting lost. | 0 | 0 | 7 | 7 | 0 | 0 | 7 | 7 |
| | Number of acres of existing vehicle access in summer and fall.[1] | 3,860 | 0 | 3,860 | 3,860 | 0 | 0 | 3,860 | 3,860 |
| | Number of existing vehicle access roads in Idaho managed according to Forest Travel Plan.[2] | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Wildlife Habitat | Number of acres of elk fall and migrational staging habitat open for logging.[1] | 2,500 | 0 | 13,200 | 13,200 | 0 | 0 | 11,500 | 13,200 |
| | Number of acres of elk winter habitat open for logging.[1] | 3,000 | 0 | 3,600 | 3,600 | 0 | 0 | 3,600 | 3,600 |
| | Number of acres where conflict between grizzly bear and human activity will remain low. | 26,248 | 72,885 | 0 | 26,619 | 29,264 | 55,883 | 18,067 | 42,040 |
| | Number of Situation 2 acres managed for the grizzly bear but not recommended for wilderness.[3] | 25,300 | 0 | 25,300 | 9,817 | 25,300 | 9,817 | 25,300 | 0 |
| Offsite and Onsite Aquatic Habitat | Number of acres that feed onsite and offsite wetlands on the Montana side and may be developed. | 4,597 | 0 | 13,871 | 13,871 | 0 | 0 | 12,778 | 13,871 |
| | Percent of drainage on the study area that feeds onsite and offsite wetlands and may be developed. | 15 | 0 | 45 | 45 | 0 | 0 | 41 | 45 |
| Range Resources | Number of AUMs. | 2,765 | 2,440 | 2,815 | 2,735 | 2,570 | 2,540 | 2,765 | 2,540 |
| | Increase in AUMs from present levels over the long term. | 325 | 0 | 375 | 295 | 130 | 100 | 325 | 100 |
| | Percent increase in grazing from present levels over the long term. | 13 | 0 | 15 | 12 | 5 | 4 | 13 | 4 |
| Timber Resources | Number of acres of suitable timber available for logging.[1] | 3,000 | 0 | 13,200 | 13,200 | 0 | 0 | 11,700 | 13,200 |
| | Million board feet of annual harvest available. | 0.6 | 0 | 2.64 | 2.64 | 0 | 0 | 2.34 | 2.64 |
| | Million board feet of annual harvest foregone.[1] | 2.04 | 2.64 | 0 | 0 | 2.64 | 2.64 | 0.3 | 0 |
| | Percent of timber harvest foregone.[1] | 77 | 100 | 0 | 0 | 100 | 100 | 11 | 0 |

## TABLE 2-3 (Continued)
## SUMMARY OF IMPACTS OF THE ALTERNATIVES FOR THE CENTENNIAL MOUNTAINS WILDERNESS EIS

| RESOURCE | EFFECT | PROPOSED ACTION 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Mineral and Energy Development | Number of acres leased for oil and gas, under lease application, or part of simo tracts that will be foregone. | 8,017 | 22,051 | 0 | 2,676 | 18,824 | 21,500 | 4,549 | 7,631 |
| | Number of acres with low to moderate geologic favorability for oil and gas that will be foregone in the long term. | 26,248 | 72,885 | 0 | 26,619 | 29,264 | 55,883 | 18,067 | 42,040 |
| Unstable Soils | Number of acres of unstable soils where development activities may occur. | 16,811 | 11,761 | 22,092 | 22,092 | 11,761 | 11,761 | 21,583 | 18,092 |
| | Percent of unstable soils where development activities may occur. | 48 | 33 | 63 | 63 | 33 | 33 | 61 | 51 |
| Economics[4] | Jobs supported by annual timber harvest, recreation, and livestock grazing. | 20 | 7 | 38 | 35 | 15 | 11 | 34 | 32 |
| | Local income from all economic activities. | 344,365 | 135,572 | 762,762 | 724,130 | 223,114 | 176,616 | 676,427 | 686,253 |

[1] Resources affected are in Montana, north of the Continental Divide.
[2] Existing access to the Sheep Station is maintained in all alternatives.
[3] All areas designated as Situation 2 are south of the Continental Divide.
[4] Income and employment projections are estimates from economic models. There is no guarantee that these predictions will be achieved.

# CHAPTER 3
# AFFECTED ENVIRONMENT

## CLIMATE

The climate within the Centennial Study Area is typical of northern, continental mountain ranges, cold and harsh. At the Fish and Wildlife Service headquarters at Lakeview, Montana, the frost free period is 51 days but it is likely to be no more than 10 days in the mountains. Recorded temperatures at Lakeview range from 91 degrees Fahrenheit in August to minus 49 degrees Fahrenheit in January. Average precipitation varies from 50 inches at higher elevations to 15 inches at the lower western end of the study area. Seventy-five percent of the precipitation comes in the form of snow. The study area is usually snow-covered into late June or early July, and it is not unusual to have an early fall snowstorm in September.

Winds are generally light and predominantly from the southwest. During the colder months, temperature inversions commonly occur as dense cold air flows to the Centennial Valley floor during evenings, periods of low wind movement, and during clear, cold nights.

## AIR QUALITY

Air quality is excellent in the Centennial Study Area due to the lack of development activity and nearby industry. Wind currents and air movements created by the Centennial Mountains uplift help to maintain a fresh, natural air condition. The airshed over the study area is presently classified as Class II. Temperature inversions commonly occur in the valley but do not result in air pollution problems due to lack of pollution sources.

## TOPOGRAPHY

The Centennial Mountains form part of the Continental Divide separating the Centennial Valley in Montana from the broad expanse of the Snake River plain to the south in Idaho. Elevations range from 6,400 feet to over 9,900 feet at the summits of Mt. Jefferson and Baldy, Slide, Taylor, and Sawtell Mountains. The northern face of the range rises nearly 3,000 feet in less than a mile from the Red Rock Lakes National Wildlife Refuge to the tops of the peaks which make up the backbone of the range.

Major drainages such as Odell Creek and Willow Creek follow major faults in the mountain uplift. Other perennial and intermittent creeks drain north and south off the Continental Divide.

## RECREATION

Big game hunting and snowmobiling are the major recreation activities in the Centennial Study Area. Big game hunting is expected to increase (MDFWP 1985). Hiking, camping, and fishing are also popular uses of the area. Table 3-1 lists the visitor days associated with each of these activities. The majority of this use occurs in the late summer, fall and winter seasons. The area receives over 2,680 big game hunter visitor days per year. Although most of the Montana side is closed to off road vehicle use, 3,860 acres are presently open to all forms of motorized vehicles in the summer and fall (USDA, FS 1984).

A part of the corridor for the Continental Divide National Scenic Trail goes through the Centennial Study Area. The final location of the trail has not been determined and existing trails along the Divide have not been marked or signed. An Interim Management Option Plan was completed by the BLM in 1980 covering the corridor from Monida to Red Rock Pass. This plan provides interim management direction until Congress approves the final management plan being developed by the Forest Service and the Continental Divide Trail Advisory Council. Interest in the trail has increased since 1983. Its use is expected to increase as the management plan is completed. Continental Divide trail users account for over 140 visitor days per year.

There are about 38 miles of hiking trails on the Idaho side. These trails are used primarily by hunters, who either hike or ride horses into the study area. A trail management plan has been completed by the Targhee National Forest for maintenance of the trails. Hiking and horseback use of the trails contribute about 950 visitor days per year.

Fishing and fishing-related activities such as backpacking and camping occur along the streams and lakes in the study area. Aldous Lake, Hell Roaring Creek, Odell Creek

TABLE 3-1

ESTIMATED RECREATION USE IN VISITOR DAYS IN THE CENTENNIAL STUDY AREA

| Recreation Use | Island Park Ranger District | Dubois Ranger District | Madison Ranger District | Dillon Resource Area | Total |
|---|---|---|---|---|---|
| Hunting | 600 | 800 | 80 | 1,200 | 2,680 |
| Trail Use | 200 | 550 | 50 | 150 | 950 |
| Continental Divide Trail | 50 | 20 | 20 | 50 | 140 |
| Fishing | 0 | 320 | 5 | 100 | 425 |
| Tent Camping | 375 | 200 | 10 | 300 | 885 |
| Snowmobiling | 315 | 100 | 81 | 100 | 596 |
| Cross-Country Skiing | 10 | 10 | 0 | 150 | 170 |

and Tom Creek support moderate to high value fisheries. Fishing use contributes over 425 visitor days per year.

A popular snowmobile route in winter brings snowmobilers from Island Park or West Yellowstone to Lakeview through the East Dry Creek road and down the O'dell Creek phosphate haul road. Snowmobilers generally then return via Henry's Lake. Snowmobile use contributes 596 visitor days per year.

Other recreational uses of the study area center around sight-seeing, photography, cross-country skiing, climbing, and nature study. However the limited access and short summer season inhibit some of these activities.

## Access

North of the Continental Divide, legal vehicle access is provided via the Price-Peet road, Jones Creek road, and the Bear Creek road on the west end and the Corral Creek road to the east. Foot access is available through BLM and Fish and Wildlife Service lands in the center portions. South of the Continental Divide, the East Dry Creek Road, and the Key Springs road supply legal vehicle access to the Continental Divide. The entire north side of the Continental Divide is closed to vehicles in winter except for the O'dell Creek trail. The Idaho side is open to winter snowmobiling. Foot access south of the Continental Divide is provided through Targhee National Forest lands outside the study area. On private lands north of the Divide, especially the Alaska Basin area, access is generally denied to the public.

## Projected Visitor Trends

It is not anticipated that wilderness designation would substantially increase use of the study area over the long term. There might be an initial increase upon designation, but it is anticipated that such increases would soon return to predesignation levels. This assumption is supported by use levels experienced at the Red Rock Lakes National Wildlife Refuge Wilderness. The area, designated wilderness in 1976, lies immediately north and adjacent to the study area. No significant increase in use occurred after wilderness designation, nor has there been any significant increase in the amount of use occurring in the interim. In 1981, there were an estimated 4,955 visitor days; in 1982, 5,256 visitor days; and in 1983, 6,210 visitor days.

Wilderness designation would not substantially reduce existing opportunities associated with off road vehicle (ORV) use during the summer season. Due to wildlife and watershed concerns, a need would still exist to maintain ORV controls. In addition, steep terrain in much of the study area precludes ORV use. The one exception would involve snowmobile use which could increase in some areas.

It is expected that the amount of hiking, backpacking, and horse riding and packing may increase slightly, especially if trailheads are established.

# GEOLOGY

The Centennial Mountains are one of the few mountain ranges in the northern Rockies that trend east-west. The mountains rise abruptly from the Centennial Valley along the Centennial fault zone. The Centennial Mountains are divided into two approximately equal parts by the northeast trending Odell Creek fault. The eastern Centennial Mountains consist of a core of Precambrian rocks overlain by Paleozoic and Mesozoic sedimentary rocks. The eastern Centennials are upthrown relative to the western Centennials along the Odell Creek fault. The western Centennials are composed of upper Mesozoic and lower Tertiary sediments considerably different from those in the eastern Centennials. The rocks in the western Centennials may be part of a thrust plate that was thrust from the southwest along the Monida thrust to its present location. (Witkind 1981). Both the eastern and western Centennials have considerable exposures of Tertiary volcanics ranging from basalt to rhyolite. At one time these volcanic rocks probably covered the entire Centennial Mountains. Erosion has removed much of this volcanic overlay.

Quaternary deposits include Yellowstone and Island Park volcanics, numerous glacial deposits in the eastern Centennials and earthflows, landslides, and other mass wasting features in the western Centennials. The glacial deposits in the western Centennials have been largely obscured by the more recent mass wasting activity.

# ENERGY AND MINERAL RESOURCES

The Energy and Minerals Map shows the location of geologic formations containing phosphate, gold, building stone, coal, and oil and gas.

## Leasable Minerals

### Phosphate

One of the Mesozoic sediments in the eastern Centennials is the phosphate-bearing Permian Phosphoria formation. The phosphate deposits near the crest and along the flanks of Sheep and Taylor Mountains were mined by the J. R. Simplot Company from 1956 to 1958. About 296,000 tons of phosphate were mined by surface mining methods. The remaining identified phosphate resources include 65,892,000 tons of acid-grade rock (greater than 31 percent phosphorus pentoxide), 107,804,000 tons of furnace-grade rock (greater than 24 percent phosphorus pentoxide), and 134,179,000 tons of benefication-grade rock (greater than 18 percent phosphorus pentoxide). Virtually all these resources are available using underground mining methods. Hypothetical resources are approximately twice as large as the identified resources. Phosphate deposits with 150 feet or less of overburden are found on 297 acres on the Montana side of the study area and 1,376 acres on the Idaho side. Possible by-products derived from processing phosphate include vanadium, chromium, uranium, silver, flourine, and the rare earths lanthanum and yttrium (Witkind 1981).

J. R. Simplot submitted an Area of Critical Mineral Potential nomination for Lease M-012510. This lease and other phosphate leases have been excluded from the study area.

### Oil Shale

Petroliferous black shales in the Phosphoria formation contain small amounts of kerogen. A black shale near Reas Peak yielded 6 gallons of oil per ton. (Condit 1919)

### Oil and Gas

Oil and gas geologic favorability is rated from low to moderate in the study area. The western end of the Centennials is the area of most interest with two anticlinal structures. The Peet Creek anticline was drilled unsuccessfully in 1978 by American Quasar. The Odell Creek anticline has not been drilled.

### Coal

A thin horizon of subbituminous coal is exposed in the western Centennials. It was mined early in the century to supply coal for a local school. It is not currently of any economic significance.

## Locatable Minerals

The geologic favorability for precious and base metals is low in most of the study area but moderate in the Beaverhead portion. Geochemical stream sampling failed to detect any anomalous concentrations of base or precious metals. A small diatreme near the crest of the eastern Centennials might be a likely exploration target but samples show lead values only slightly above background levels. Exxon Minerals Company submitted an Area of Critical Mineral Potential nomination for the study area; however, no background information was suppled with the nomination.

Mining claims for decorative building stone are located near Reas Peak. They produce between 50 to 100 tons per year. The access road to the claim has been deleted from the study area.

## Salable Minerals

Rocks suitable for use as decorative stone (quartzite and dolomite) occur near the study area on Reas Peak. There may be additional areas with rock suitable for decorative purposes. There are a wide variety of mineral materials (sand, gravel, etc.) which may be suitable for some local uses.

## Mining Claims, Leases, and Permits

There are no mining claims in the Montana portion of the Centennial Mountains. In Idaho there are 16 lode claims for decorative building stone in Sections 7, 8, 17 and 18, T. 14 N., R. 42 E. The Tin Cup claims operate under an approved operating plan. These claims cover approximately 160 acres, but only the area presently being mined is excluded from the study area.

There are numerous oil and gas leases, applications, or simultaneous oil and gas lottery (simo) tracts in the study area. On the Montana side, there are 3,145 acres in simo tracts, 10,054 acres of leases and 1,221 acres of lease applications. Oil and gas leases have been denied for most of the core of the primitive area. On the Idaho side, there are 4,900 acres in simo tracts and 2,731 acres leased. There are no pending applications.

Most of the eastern Centennials are covered by the Executive Order of October 9, 1917 which created a withdrawal for a phosphate reserve. These phosphate reserve withdrawals were reviewed under the BLM's withdrawal review program and the Butte District Office recommended they be dropped. Phosphate lease M012510 encompasses 559 acres in the Sheep Station south of Sheep Mountain and north of the Idaho border. Phosphate leases on the Idaho side include 606 acres in a preference right lease and 1,041 acres in a competitive lease for a total of 1,647 acres.

Section 4(a)(3) of the 1964 Wilderness Act withdraws all designated wilderness lands from mineral entry or leasing after December 31, 1983. If all or any portion of the Centennial Study Area is designated wilderness, any opportunity for locatable and saleable mineral development will be foregone.

## Mineral Resource Projections

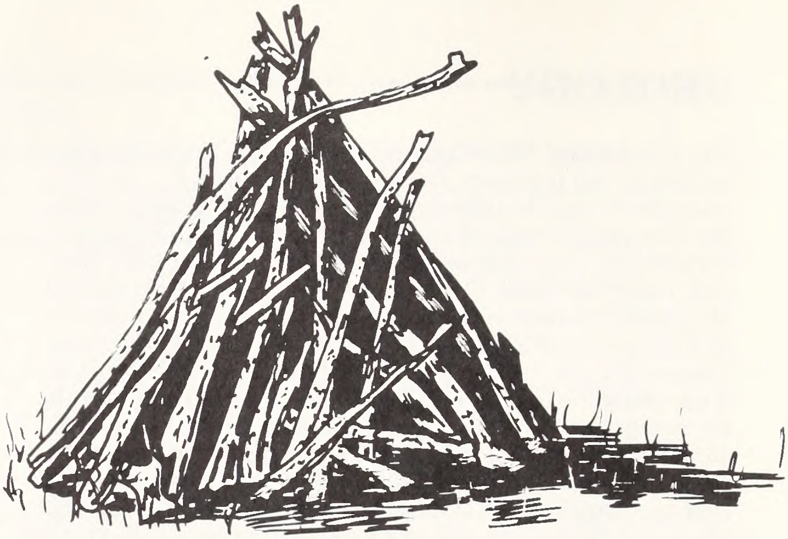
As discussed above, the Centennial Mountains have large resources of phosphate. The phosphate deposits are near the crest of the range in areas of relatively gentle terrain with little timber. Mining done in the 1950s was surface mining, any future mining will be primarily underground mining. Supply and demand forecasts by the Bureau of Mines for the foreseeable future indicate a surplus of phosphate in the domestic economy. Phosphate for fertilizer is expected to have a 1.5 percent per year growth rate in domestic markets and a 2.7 percent per year growth rate in export. The high mining costs, long distance to likely markets, and climatic conditions combine to make the deposits unattractive at the present time. Any development of the phosphate resources in the Centennial Mountains is unlikely before the year 2000.

The geologic favorability for oil and gas is low to moderate. The potential for decorative stone is moderate but long truck hauls and the short operating season will likely limit development.

The geologic favorability for other mineral resources, industrial minerals, base and precious metals, oil shale, and geothermal energy is low to moderate.

# CULTURAL

Cultural surveys on the northern slope and on the Continental Divide of the Centennial Mountains has been undertaken mainly from random sample inventory conducted during the Mountain Foothills Grazing Environmental Impact Statement (USDI, BLM 1980). Information about cultural resources in the study area has been collected mainly from clearances conducted for range projects and survey of the proposed Continental Divide National Scenic Trail. Only a small portion of the study area has been examined to date.



Evidence of Paleo-Indian occupation dating back 10,000 to 14,000 years has been found adjacent to the study area within the Centennial Valley and on the Snake River Plains. The prehistoric inhabitants were hunter-gatherers. They shifted residence in response to seasonal climatic changes in the availability of food. They lived in small family groups and fashioned their utensils from stone, hide, bone, and wood. Much of the stone was secured from the local obsidian and ignimbrite deposits. Bighorn sheep and bison were the desired sources of food, hide, and bone. The remaining traces of these occupants include isolated tools, scatters of chipped stone, and campsite remains.

In total 26 cultural resource sites have been identified in the study area. They include one conical timber lodge, one semi-circular rock ring, one small rock alignment, five stone quarry workshops, seventeen surface lithic scatters related to stone tool manufacture and food gathering-preparation activities, and one log cabin ruin.

The study area was not homesteaded, and historic use has been limited to grazing, hunting, and mining. About 12 mining claims or claim groups have been located within the study area since 1896, mostly from 1950 to l974. Most were lode claims, presumably for gold; and workings consist only of a few prospect pits. One claim for coal was filed in 1912 and included a 110-foot shaft. It produced a few tons of coal for use at the school at Kilgore, Idaho. Trails, water troughs, hearths, and occasional dumps indicate sheepherder's activities.

Despite the low number of recorded sites, the archaeological potential of the study area is high. Areas lower on the slopes of the Centennials have been more intensively surveyed. These surveys show that the mountains were heavily used. Abundant supplies of wildlife, camas (a staple food plant), and obsidian-ignimbrite sources were attractive to the Indians. The Centennials also lie across the route from the Snake River Plains to the Great Plains, which was used by Indians living in both areas. More information on how the Indians adapted to mountain environments and to each other probably lies buried in the sites within the study area.

# VISUAL RESOURCES

The Centennial Mountains provide some of the highest quality scenic values in southwestern Montana. The landscape has high, rugged, forested mountains. The dramatic 3,000-foot rise of the northern face is a well known landmark in southwestern Montana. The southern face of the range is less spectacular; moderately steep, broad open ridges are separated by conifer covered drainages.

The Centennials are part of the Northern Rocky Mountain physiographic province (Fenneman 1938).

# WATER AND SOILS

## Surface Water

The snow pack that accumulates on the study area is an important contribution to the overall water balance. Snowmelt begins in April and peaks in late May or mid June. The average snowpack water content is 35 inches.

The snowmelt on the Montana side drains into the Red Rock River, which has very hard water containing calcuim bicarbonate with moderate sulfate, sodium, magnesium, and chloride concentrations. Lead, zinc, cadmium, and copper are present in low concentrations. Recorded low flow turbidities are significantly higher than in other major streams in southwest Montana. Highly erodable soils compounded by historic overgrazing on the public lands increase the turbidity levels. Water temperatures are suitable for the propagation and growth of salmonids and associated aquatic life (Mt. DHES 1980).

The Water Quality Bureau data (Mt. DHES 1982) for the Red Rock River above Lima Reservoir shows that excess suspended sediment, nitrogen, and phosphorous levels are deteriorating the water quality to the point that aquatic life and recreational uses are suffering. More specifically, data collected on Odell Creek in Section 31, show an elevated suspended sediment concentration of 35 milligrams per liter (mg/l). This value is above the concentration of 25 mg/l which is known not to cause adverse effects on aquatic life (Zucker 1972). The data also shows total coliform levels above the Montana average.

On the Idaho side, water quality is excellent except for sediment from minor road erosion and the phosphate mining in Taylor Creek. About 15,000 acres are closed to livestock grazing for watershed improvement. These projects include contour trenches to reduce sheet and rill erosion in Taylor Creek and the East Fork of Hotel Creek. A reclamation plan is being written for the phosphate mining and will be implemented in 1985 or 1986.

## Ground Water

The intermontane basin in which the Red Rock Lakes lie contains tertiary alluvium deposits which yield a moderate amount of water. Ground water quality varies, but is generally of good quality (240 to 400 mg/l dissolved solids) (Pettyjohn, et al 1979).

## Soils

Six major soil types are found in the Centennial Mountains. Appendix E summarizes their characteristics and the Soils Map shows their location.

Thirteen percent of the study area has formed on limestone. These soils are cold, often calcereous to the surface, shallow to deep, coarse textured, and range from moderately steep to very steep sideslopes and ridgetops on forested and open grasslands. Rock outcrops, talus slopes, and bare scarps are common. These soils are stable with low to moderate compaction hazard but moderate to severe erosion hazard. Their revegetative potential when disturbed is low to moderate.

Soils formed from Tertiary volcanics cover 33 percent of the study area. They are cold, usually forested, moderately deep to deep, coarse textured, and range from nearly level to steep on strongly dissected slopes. They are typically stable with low to moderate compaction hazard, but moderate to severe erosion hazard due to their coarse textures. Their revegetation potential when disturbed is low to moderate.

There are two exceptions. The extreme eastern end of the study area is weakly to moderately dissected scarp lands with scattered noncommercial timber interspersed with rock outcrops, rocky ridges, and talus slopes. Slopes are highly variable but range between 5 to 65 percent.

The other exception is north of the Centennial Divide on the west end of the study area. These soils are more developed than the other volcanic derived soils. Consequently, they are typically fine textured and deep with high available water capacity and high revegetative potentials on cut and fill slopes. Slump and compaction hazards are high however, and erosion hazards are moderate to severe.

Soils formed from Cretaceous and Tertiary sediments cover 32 percent of the study area, primarily on the west end. These soils range from shales and siltstones with interbeds of sandstones. These are mostly cold, fine textured soils and range from nearly level ridgetops to steep moderately dissected side slopes under herbaceous or forest vegetation. Past landslide activity has caused hummocky and step-like relief with wet areas in some depressions. These soils have a high to very high slump hazard and will move when support is removed. Erosion hazard is moderate to severe, depending on slope; and the compaction hazard is high due to the fine soil textures. Their revegetative potential is low to high.

Eleven percent of the study area has formed on sandstone and quartzites. Soils are cold, droughty, usually coarse textured and range from gently sloping to steep open grasslands. Where slopes are gentle, soil textures are fine and deep and support some timber stands. The phosphate mines are located within this soil type. These soils are generally stable with low to moderate compaction hazards but moderate to severe erosion hazards depending on slope. Revegetative potential is low to high depending on slope and available water capacity. Rock outcrops are common.

Soils formed in Quaternary deposits make up six percent of the study area. These soils occur within the Volcanic, Cretaceous, and Tertiary sediments, and therefore represent a wide range of soil characteristics and vegetative types. These soils are composed of granules to boulders in the unconsolidated to semiconsolidated matrix of clay, silt, and sand. The topography varies from hummocks to step-like to a cluster of narrow sinuous ridges separated by deep narrow drainages. These soils are unstable and require great care when harvesting timber and constructing roads. Anything that might add weight to or remove support from these soils will increase their vulnerability to mass movement.

The soils formed on Precambrian Metamorphics are on five percent of the study area and occur in the eastern portion primarily on and around Nemesis Mountain. They are shallow to moderately deep, steep to very steep, cold, coarse textured and droughty. There is some timber but most is scattered and noncommercial. These soils are generally stable with low compaction hazards but moderate to severe erosion hazard. Revegetative potential is low to moderate depending on slope and available water capacity. Rock outcrops are common.

More detailed soils information is available from the respective land management agencies.

## GRAZING MANAGEMENT

The study area has been grazed with herded sheep since the 1890s. This use peaked in the 1920s resulting in overgrazing of the study area. Sheep grazing has been reduced by 70 percent by agency and permittee cooperation to halt overgrazing. Due to the decline in the sheep industry several sheep allotments have been in nonuse at least one year out of the past five. There have been requests to convert some allotments from sheep to cattle. Such a conversion would require two to five miles of drift fence added in the study area.

In the 1960s, permittees in Montana began changing to cattle operations. Several sheep grazing areas were removed from allotments. Forest encroachment, management practices, and fire suppression have led to reduction in the capacity of these areas for stockgrazing. Current management strives to provide suitable habitat for both livestock and wildlife.

The Sheep Station is the last sheep operation on the Montana side of the study area. In recent years there has been some renewed interest in sheep allotments, but no applications have been filed for grazing permits in the Centennial Mountains.

The BLM grazing allotments are on the fringes of the study area. They include private land and, in some cases, other public land outside of the study area within the same pasture. In some cases, the permitted authorization in the study area occurs to avoid having to build fences between public and private land. In these cases, livestock grazing on the public land was less of a concern than the hazard that a fence presents to game movement.

### Allotment Summary

Currently, 2,440 AUMs are leased for grazing sheep and cattle. Table 3-2 lists the grazing allotments, season of use, and management strategies.

## VEGETATION

The study area has mollic-type soils (generally associated with grasslands) identified under what is currently conifer forest. Forest habitat types are Douglas-fir and western spruce, fir. Some enchoachment of conifers has occurred on grasslands as a result of fire suppression and other influences.

Other vegetative types include mountain meadows and parks, sagebrush-grasslands, aspen communities, and riparian communities. Some areas are extremely steep with rock cliffs and ledges that have only minor amounts of vegetation.

Aspen groves and riparian communities occur throughout the study area. These communities serve as areas of conflict amongst game, watershed, aesthetic, and livestock resources as well as provide important edges for wildlife and livestock. Diversified vegetation in these communities provides important habitat for big game.

The sagebrush-grassland, mountain meadows, and parks are interspersed throughout the study area associated with particular land features. There are no expansive areas of these vegetative types; however, they furnish important forage for game and livestock. These vegetative communities are probably declining but prescribed fire under existing fire management plans is expected to reverse this trend in the long run.

### Noxious and Poisonous Plants

Noxious weeds are not currently a problem in the Centennial Study Area. However, Canada thistle, musk thistle, and houndstongue can be found. Infestation of knapweed is spreading into southwestern Montana and may soon appear in the Centennial Valley. Noxious weeds are readily spread by livestock, wildlife, and vehicles traveling between infested and uninfested areas.

Tall larkspur is found in the Centennial Study Area. This plant is poisonous to cattle but not to sheep. With careful planning, sheep can be used to control tall larkspur and reduce the risk of poisoning to cattle.

TABLE 3-2

GRAZING ALLOTMENTS IN THE CENTENNIAL STUDY AREA

| Grazing Allotment | Season | Class of Stock | Management Strategy |
|---|---|---|---|
| Pete Creek | July - October | Cow/calf pairs and yearling cattle | Deferment - pasture level stocking |
| Shambo Unit | July - October | Yearling cattle | Alternating rest |
| Duff Creek | July - October | Yearling cattle | Refuge lead: 3-treatment rotation, incidental to larger refuge area |
| Red Rocks | July - September | Cow/Horse | Incidental to private land |
| Tom Creek | May - November | Cow/calf pairs | Incidental to private land |
| Morton | May - November | Varies | Incidental to private land |
| Davis | June - October | Varies | Incidental to private land |
| Ching Creek | July - August | Sheep | Deferred rotation based on herding |
| Coal mine | July - September | Sheep | Deferred rotation based on herding |
| Cottonwood Lake | July - September | Sheep | Deferred rotation based on herding |
| Little Creek | July - September | Sheep | Deferred rotation based on herding |
| Saw Creek | July - September | Sheep | Deferred rotation based on herding |
| Table Mountain | July - September | Sheep | Deferred rotation based on herding |
| Blue Creek | July - August | Sheep | Deferred rotation based on herding |
| Carrot-Taylor | July - August | Sheep | Deferred rotation based on herding |
| Coffeepot | July - August | Sheep | Deferred rotation based on herding |
| Hotel Creek | July - August | Sheep | Deferred rotation based on herding |
| Ice House-Willow Cr. | July - August | Sheep | Deferred rotation based on herding |
| Myers Creek | July - September | Sheep | Deferred rotation based on herding |
| Snyder Creek | July - August | Sheep | Deferred rotation based on herding |
| High Five | July - September | Cattle | Deferred rotation based on pastures |

### Fire Suppression

Wildfires have occurred in the study area at intervals of 22 to 40 years (Arno 1983). Fire management options of the future will include prescribed fire, wherein natural ignitions will be allowed to burn under prescribed conditions, and fuel modification which will likely affect the occurrence of wildfires. Wildfires in the BLM portion of the Centennial Mountains will be managed as prescribed in the Fire Management Plan for the Dillon Resource Area (USDI, BLM 1984a) The Targhee National Forest portion will be managed under guidelines in the High Country Fire Management Plan, (USDA, FS 1985b). The Beaverhead National Forest portion will be managed under the Beaverhead National Forest Fire Management Plan (USDA, FS 1986a).

## WILDLIFE

Wildlife found in the study area are fairly typical of the spruce, fir habitat types in southeastern Idaho and southwestern Montana mountains. The severe winter climate and deep snows preclude winter use by most big game species with the exception of bear, moose, and elk in the extreme western portion. The area is exceptional in diversity of management priority species, including 13 species of special interest or concern listed by the Montana Department Fish, Wildlife and Parks (MDFW&P 1984), and 5 species listed by Idaho (IDF&G 1984). (See Table 3-3 and 3-4).

### Big Game

Mule deer are common throughout the study area during spring, summer, and fall. None winter in the study area and winter movements are poorly documented. Some deer are known to move northwest to winter in the Red Rock River drainage. Summer habitat quality is excellent on the Montana side, due to mesic conditions and an abundance of high quality forage plants. The quality and quantity of shrub species limit the Idaho side to less then optimum conditions for mule deer.

Mule deer summering in the study area are probably limited by winter habitat quantity and quality within a reasonable migration distance.

Elk are common, particularly in the western one-half of the study area where the best habitat occurs. The Centennial Mountains provide habitat for an important interstate (Montana, Idaho) elk herd. A large number of elk summer in the Centennial Mountains in both Montana and Idaho. During late fall, an estimated 300 to 500 elk, many of which summer in Idaho, utilize the western portion of the study area in Montana as a migrational staging area. Many elk from the interstate herd winter in Idaho on the Sand Creek winter range. Radio telemetry studies by the Montana Department of Fish, Wildlife and Parks (MDFW&P) have documented migrations from this area, northward to the Blacktail Game Range and the Basin Creek area.

During mild, open winters, elk remain on lower portions of the migrational staging area and utilize about 3,600 acres of the study area as winter habitat. The primary, normal

## TABLE 3-3

## WILDLIFE OCCURRENCE & RELATIVE ABUNDANCE IN THE MONTANA SIDE OF THE CENTENNIAL STUDY AREA

| Species | Season | Habitat<br>Existing | Habitat<br>Potential | Abundance |
|---|---|---|---|---|
| BIG GAME | | | | |
| Mule deer | Summer | 30,000 ac. | 30,000 ac. | Common |
| Elk | Summer | 30,000 ac. | 30,000 ac. | Common |
| Elk | Fall-migrational | 13,200 ac. | 13,200 ac. | Abundant |
| Elk | Fall-winter | 3,600 ac. | 3,600 ac. | Common |
| Moose | Yearlong | 25,000 ac. | 25,000 ac. | Abundant |
| Black bear | Yearlong | 30,000 ac. | 30,000 ac. | Abundant |
| Bighorn | Summer | 0 ac. | 0 ac. | Extirpated |
| UPLAND GAME BIRDS | | | | |
| Blue grouse | Yearlong | 30,000 ac. | 30,000 ac. | Common |
| Ruffed grouse | Yearlong | 3,000 ac. | 3,000 ac. | Common |
| Spruce grouse | Yearlong | 15,000 ac. | 15,000 ac. | Uncommon |
| NONGAME | | | | |
| Wolverine* | Yearlong | Unknown | Unknown | Rare |
| Canada lynx* | Yearlong | 30,000 ac. | 30,000 ac. | Uncommon |
| Hoary marmot* | Yearlong | Unknown | Unknown | Unknown |
| Great Gray Owl* | Yearlong | Unknown | Unknown | Unknown |
| N. Goshawk* | Summer | Unknown | Unknown | Uncommon |
| Sharp-shinned hawk* | Summer | Unknown | Unknown | Uncommon |
| Cooper's Hawk* | Summer | Unknown | Unknown | Uncommon |
| Long-eared Owl* | Summer | 3,000 ac. | 3,000 ac. | Common |
| Prairie falcon* | Summer | 5,000 ac. | 5,000 ac. | Common |
| Golden Eagle* | Summer | 6,000-10,000 ac | 6,000-10,000 ac. | Common |
| Dwarf shrew* | Yearlong | Unknown | Unknown | Unknown |
| THREATENED — ENDANGERED | | | | |
| Peregrine falcon | Summer | 1,500 ac. | 5,000 ac. | Uncommon |
| Grizzly bear | Yearlong | 25,526 ac. | 30,000 ac. | Uncommon |
| Wolf | Summer | 0 ac. | 30,000 ac. | Extirpated |
| FISHES | | | | |
| Westslope cutthroat trout* | Yearlong | 5.5 mi. | 14 mi. | Common |
| Brook trout | Yearlong | 2.6 mi. | 14 mi. | Common |
| Grayling* | Yearlong | 0 mi. | 4 mi. | Extirpated |
| Grayling* | Spring | 0 mi. | 8 mi. | Extirpated |
| Yellowstone cutthroat trout* | Yearlong | 1 mi. | 14 mi. | Uncommon |

*Species of special interest or concern, Montana Department of Fish, Wildlife and Parks.

## TABLE 3-4

## WILDLIFE OCCURRENCE AND RELATIVE ABUNDANCE IN THE IDAHO SIDE OF THE CENTENNIAL STUDY AREA

| Species | Season | Habitat<br>Existing | Habitat<br>Potential | Abundance |
|---|---|---|---|---|
| UNGULATES | | | | |
| Mule Deer | Summer/Fall | 42,000 ac. | 42,000 ac. | Common |
| Elk | Summer/Fall | 42,000 ac. | 42,000 ac. | Common |
| Moose | Yearlong | 42,000 ac. | 42,000 ac. | Common |
| CARNIVORES | | | | |
| Black Bear | Yearlong | 42,000 ac. | 42,000 ac. | Common |
| Coyotes | Yearlong | 42,000 ac. | 42,000 ac. | Common |
| Wolverine* | Yearlong | Unknown | | Rare |
| Fisher* | Yearlong | Unknown | | Rare |
| AVIAN | | | | |
| N. Goshawk | Spr-Sum-Fall | 39,000 ac. | 39,000 ac. | Common |
| Sharp-shinned Hawk | Spr-Sum-Fall | 2,000 ac. | 2,000 ac. | Common |
| Coopers Hawks | Spr-Sum-Fall | 2,000 ac. | 2,000 ac. | Common |
| Blue Grouse | Yearlong | 42,000 ac. | 42,000 ac. | Common |
| Ruffed Grouse | Yearlong | 4,000 ac. | 4,000 ac. | Common |
| Prairie Falcon | Summer | 4,000 ac. | 4,000 ac. | Rare |
| Great Grey Owl | Spr-Sum-Fall | 35,000 ac. | 35,000 ac. | Uncommon |
| Spruce Grouse | Yearlong | Unknown | | Uncommon |
| THREATENED - ENDANGERED | | | | |
| Peregrine Falcon | Spr-Sum-Fall | 3,000 ac. | 3,000 ac. | Rare |
| Grizzly Bear | Yearlong | 23,000 ac. | 23,000 ac. | Rare |
| FISHES | | | | |
| Cutthroat Trout | Yearlong | 3 Lakes | | Common |
| Brook Trout | Yearlong | 8 Miles | | Common |

*Species of special interest or concern, Idaho Department of Fish and Game.

year, winter habitat occurs immediately west of the study area. The study area supports 75 to 100 elk in severe winters and as many as 300 in open winters.

The Centennial Mountains and the Red Rock Refuge support an important interstate (Montana, Idaho) moose population. Moose migration has been documented from both Henrys Lake and Junipers-Big Bend in Idaho to the Red Rocks Refuge in Montana (Ritchie 1978).

Moose are abundant throughout the study area, particularly in riparian vegetation along the numerous drainages and in the spruce, fir habitat types. Moose use the study area quite intensively during the summer. Winter use is much less intensive, with about 15 to 25 moose remaining on the study area.

The majority of the moose summering in the study area may winter on the Red Rock Lakes Refuge. Some may move south into Idaho to winter off the study area. Moose remaining yearlong probably represent a distinct resident population as opposed to those which migrate significant distances to wintering habitats. Moose hunting occurs throughout the Centennials but the late hunt occurs exclusively on lands managed by Fish and Wildlife Service.

Black bear are abundant yearlong inhabitants of the entire study area. Bear observations and signs are very common, and the study area is considered good quality habitat. Black bears are often seen during spring and fall in low elevation, riparian areas and aspen woodlands. Intensive fall use occurs in whitebark pine stands, where bears raid squirrel caches.

Bighorn sheep historically inhabited the study area and were probably wiped out by domestic sheep grazing about the turn of the century. Presence of skulls to this date suggests that bighorn were probably abundant. Suitable habitat remains; however it is believed that, historically, bighorn probably migrated to suitable winter habitats. Restablishing historical migrations is not practical at this time. For this reason, the introduction of possibly non-native mountain goats was approved in the 1979 Management Framework Plan (USDI, BLM 1979). Goats would be better suited to wintering on the study area. There have been occasional recent sitings of mountain goats.

## Upland Game Birds

Three species of forest-dwelling grouse; blue, ruffed, and spruce (Franklins); inhabit the study area. Blue grouse and ruffed are common, and spruce are uncommon. Blue grouse prefer Douglas-fir associations, especially forest edges. Ruffed grouse prefer riparian sites with decidious woody compositions and aspen woodlands. Spruce grouse occur primarily in the spruce, fir forests.

## Nongame Species

Species of special concern that are known to inhabit the study area include wolverine, Canada lynx, northern goshawk, sharp-shinned hawk, Cooper's hawk, long-eared owl, prairie falcon, and golden eagle. The hoary marmot and great grey owl have been seen in the study area but their status is unknown. The dwarf shrew is expected to occur in rocky, alpine habitats but has not been verified. Other nongame species found in the study area are listed in Table 3-3 and 3-4.

## Threatened and Endangered Species

### Grizzly Bear

Grizzly bears (threatened) inhabit the study area, however the area was not recognized in the recovery plan (Brown 1982) as occupied territory. BLM has 16 reliable grizzly observations on the Montana side for the 1974-84 period. Some observations were made by biologists for BLM, the Fish and Wildlife Service, and the Interagency Grizzly Bear Study Team (IGBST). There are three confirmed and two unconfirmed grizzly bear observations on the Idaho side for the 1975-84 period. The confirmed sighting met the IGBST guidelines. About 25,300 acres in Idaho are designated as Situation 2 grizzly bear habitat as defined by the IGBST guidelines. Situation 2 contains suitable habitat in which grizzly bears are known or highly suspected to occur but about which there is inadequate information to classify the habitat as necessary for recovery of the species.

The study area contains the diversity of habitat components apparently used by grizzlies in the Yellowstone Area (Blanchard and Knight 1978). Dense timber for cover and abundant food producing meadows and riparian stands are present. Whitebark pine stands and squirrel caches are present above 8,500 feet and are utilized for fall foraging.

Telemetry studies by the IGBST in Yellowstone indicate that the study area by itself is too small to support a discrete population of grizzlies (Blanchard & Knight 1978). Based upon a reconnaissance inventory by the IGBST for BLM in 1978, they concluded that the Centennial Study Area is suitable for grizzly bear habitat when considered as a part of the Yellowstone population.

### Peregrine Falcon

Peregrine falcons (endangered) inhabit the study area as a result of reintroduction efforts funded by BLM, Forest Service, and Fish and Wildlife Service in the last five years. Captive-raised peregrines were provided and cared for by the Peregrine Fund under contract to the federal agencies and with the cooperation of the Montana Department of Fish, Wildlife and Parks. One pair of the reintroduced peregrines has returned to the study area to successfully nest and fledge young, and represents one of only two known active eyries in Montana. Suitable nesting habitat is found near Taylor Mountain, Mt. Jefferson, and Sawtell Peak. The study area is an essential component of the peregrine recovery effort and reintroduction efforts will continue for at least five years.

### Wolf

There was evidence of sporadic wolf (endangered) use in the study area during the 1960s and early 1970s. No observations have been recorded during the past 10 years, and wolves are not believed to presently inhabit the study area.

## Fisheries

Fisheries are confirmed in fourteen streams and unverified in two streams, totaling about 23 miles of stream habitat. These are characteristically small, steep-gradient headwaters streams. There are three lakes with trout. These are periodically restocked by the Idaho Fish and Game. Historically, grayling inhabited 15 miles of stream and westslope cutthroat inhabited 9 miles of stream within the study area. Both are species of special interest and concern. Westslope cutthroat occupancy has declined to 5.5 miles and grayling no longer inhabit the study area.

Introduced brook trout inhabit three streams and Yellowstone cutthroat trout inhabit two streams within the study area. The Yellowstone cutthroat have hybridized with the endemic westslope cutthroat. Unhybridized westslope cutthroat remain in five streams.

The commencement of irrigation diversions, poor grazing practices, and introductions of nonnative fishes in the adjoining Centennial Valley at about the turn of the century led to the rapid decline of native fishes. As late as 1915, grayling were still abundant in portions of the Centennial Valley (Nelson 1954). By the 1950s, grayling spawning runs had diminished to a few tributaries downstream of the study area.

Presently, one of Montana's few relict native grayling populations inhabits Upper Red Rock Lake on the adjoining Red Rock National Wildlife Refuge. This population ascends Red Rock Creek, just below the study area, to spawn. The study area thus contributes greatly to the maintenance of this grayling population by providing the entire watershed for Red Rock Creek.

There is good potential for the re-establishment of endemic westslope cutthroat on about nine miles of stream. There is potential to re-establish grayling spawning on about eight miles of stream, however this would be accomplished primarily through management practices off the study area.

## Red Rock Lakes Wildlife Refuge

The study area greatly influences the wildlife values on the adjoining Red Rock Lakes National Wildlife Refuge. Most of the fishery and waterfowl resources of the refuge are influenced by watershed resources on the study area (Greater Yellowstone Coalition 1986). There is a highly significant relationship between seasonal moose use on the study area and the refuge. Likewise, peregrine falcon use is interrelated, with the study area providing most of the suitable nesting habitat and the refuge providing most of the prey base.

The wildlife refuge contains a significant number of trumpeter swans, presently a stable summer breeding population of approximately 60 to 80 birds amd a wintering population of about 250 to 350. Offsite factors, such as human disturbance, may have a bearing on trumpeter swan survival but the interrelationship is not clear at present.

# FOREST RESOURCES

The predominant habitat types in the study area are the Douglas-fir and western spruce, fir forests. Within these general forest types, vegetation tends to occur in zones. The distribution of zones is controlled by factors associated with elevation and to a lesser extent by aspect and topographic position. The uppermost zone is the alpine zone characterized by hardy communities of short growing season grasses and stringers of scattered Douglas-fir, subalpine fir, and whitebark pine. This zone can be seen near the Continental Divide in the highest elevations. Below the alpine zone is the subalpine zone generally dominated by climax subalpine fir interspersed with forb and grass meadows and sagebrush parks. The montane zone occurs below the subalpine zone and is characterized by a predominance of mature Douglas-fir stands. On the warmer southerly aspects, the montane zone occasionally extends to the Continental Divide. The subalpine zone also extends to the montane on northerly exposures, covering these slopes with dense stands of shade-tolerant subalpine fir. On the lower elevations of the subalpine and montane zones, lodgepole pine is a seral species, quickly invading disturbed sites such as the headwaters area of Kay Creek and Ching Creek below Slide Mountain and Spring Creek on the extreme east end of the study area. The species is quite frost hardy and can remain dominant on gentle terrain where air drainage is poor and cold temperatures are common. This occurs in numerous flat saddles and basins. Aspen is another disturbance stimulated seral species which occurs with Douglas-fir in mixed stands within the montane zone. Pure aspen stands can also be found in many of the drainages, such as Dry and Cottonwood creeks, in both the montane and subalpine zones. Englemann spruce occurs along most of the major drainages and in wet, boggy areas such as the Coon, Cottonwood, and Kay Creek watersheds.

A variety of insect and disease problems plague the timbered stands, however, the mountain pine beetle in lodgepole pine and the western spruce budworm in Douglas-fir and subalpine fir are the most significant and destructive. Most susceptible host lodgepole pine have been killed by the bark beetle during the recent epidemic of the 1970s and early 1980s. Defoliation by western spruce budworm has been aerially detected since 1975 through 1983 at moderate to high levels but showed abatement to a low level in 1984, according to Forest Service Pest Management Surveys. This insect has seriously affected cone production in Douglas-fir. Table 3-5 displays forest land productivity and suitability for timber harvest information. Areas covered by suitable timber is shown on the Suitable Timber Map.

Mature predominately Douglas-fir sawtimber stands occupy about 80 percent of the suitable forest land acreage and mature lodgepole pine stands occupy about 10 percent. Immature stands of predominately Douglas-fir and lodgepole pine occur in various stages of development on the remaining suitable forest land acreage. Yields of 2.64 mmbf/year are projected for the next four decades on a standing volume of 128.5 mmbf.

### TABLE 3-5

### ACRES OF FOREST LAND IN THE CENTENNIAL STUDY AREA

| Component | Acres in Targhee National Forest | Acres in BLM | Acres in Beaverhead National Forest |
|---|---|---|---|
| Nonforest land (less than 16 percent crown and canopy coverage) | 924 | 6,492 | 1,719 |
| Unproductive forest land (less than 20 cu. ft. /ac./yr. growth | 9,475 | 0 | 0 |
| Unsuitable forest land (Harvest would result in unacceptable soil/water resource damage) | 15,480 | 969 | 1,900 |
| Suitable forest land | 19,571 | 18,255 | 855 |
| Suitable forest land available for timber harvest (As determined by land management plans) | 0[1] | 13,200[2] | 0[3] |

[1] Under the *Land Management Plan for the Targhee National Forest*, no timber will be harvested in the study area. Timber harvest could occur only after revision of the management plan.

[2] Under the *Dillon Resource Area Management Framework Plan*, timber will be harvested west of Matsingale Creek.

[3] Under the *Forest Plan for the Beaverhead National Forest*, timber harvest will not be scheduled.

## LAND STATUS AND USE

On land adjacent to the Centennial Study Area, land uses include livestock grazing, timber harvest, tourist sightseeing, recreation and management activities on the Red Rock Lakes National Wildlife Refuge, a small resort operation at Lakeview and possibly some small scale hard rock mining. Table 3-6 lists the landowners along the study area boundaries and the Land Status map shows the ownership patterns in the area. Low potential exists for a major phosphate mining operation within the study area in the next 50 to 100 years. Other industrial activities are unlikely near the area in the foreseeable future.

The Department of Agriculture's Agricultural Research Service operates a sheep experiment station on a 16,650-acre withdrawal (#EO3767) located in two separate parcels. These lands are subject to whatever development is necessary for sheep experiment purposes as the Agricultural Research Service has full management jurisdiction.

The state of Montana owns all surface and mineral rights on 680.32 acres in two parcels within the Centennial Study Area in T14S, R1E, Sec. 36 and T15S, R2W, Sec. 16. There are also 2,460 acres in four parcels of Montana state-owned land immediately adjacent to the north side of the study area. State lands are subject to development and access requirements outside federal jurisdiction. State inholdings

### TABLE 3-6

### LAND OWNERSHIP ALONG THE BOUNDARY OF THE CENTENNIAL STUDY AREA

| Ownership | Mile of Boundary | Percent of Boundary |
|---|---|---|
| State | 11.5 | 8 |
| BLM | 13.0 | 9 |
| Forest Service | 91.0 | 62 |
| Red Rocks Lakes National Wildlife Refuge | 9.5 | 6 |
| Private | 22.0 | 15 |
| Total | 147.0 | 100 |

are open to mineral and grazing leasing, and access to the inholdings would be across public lands in the study area. Montana has indicated a desire to exchange these parcels if the adjacent study area is designated wilderness.

A parcel of BLM land of 228.07 acres has been leased in T14S, R2W, Sec. 26 for purposes of a small ski resort which is presently not being used. A lodge building and a rope tow lift are within the leased area. This lease is under authority of Section 302 of FLPMA and is adjacent to the Centennial Study Area.

Executive Order of October 9, 1917 established Phosphate Reserve 30 Montana 7 which includes 3,092.51 acres within the Centennial Study Area. A portion of this identified phosphate reserve, 2,349.5 acres, is under lease.

Approximately 12,785 acres of the Centennial Mountains are under oil and gas lease, a further 1,221 acres are under oil and gas lease application, and 8,045 acres are part of the simo tracts.

Sixteen mining claims encompassing about 160 acres make up the Tin Cup Claim Group. These claims are for building stone and the claimants have been operating under an approved operating plan for some time.

In March 1985, as part of the First Continental land exchange, BLM acquired a total of 7,500 acres in the Centennial Valley which are directly contiguous to the western edge of the Centennial Study Area. These lands were acquired through a land pooling process which traded BLM scattered tracts primarily in the Beaverhead and Madison Counties in exchange for the 7,500 acres.

## SOCIAL CONDITIONS

### Local Attitudes and Perceptions

Residents of the area exhibit attitudes and values typical of rural, ranch-oriented societies in the western United States. The rural character of the area is what residents value most about their lifestyle. Specifically, they appreciate the wide open spaces, naturalness, fresh air, and solitude. The personal characteristics of other local people (friendliness, independence, and industriousness) were frequently mentioned as positive aspects. The residents also valued the lifestyle offered by the local communities: knowing everyone else, the lack of urban problems, relaxed pace, and personal freedom. They feel their area is a good place to raise children and, not surprisingly, every respondent wanted to maintain this lifestyle and the traditional land uses of the area.

Many residents feel the biggest threats to their lifestyle are government interference with local ranches, wilderness designation, high taxes, inheritance taxes, and diverting the use of public lands to wildlife or recreation. They want the land controlled at the local level and resent interference from outside the area, whether from agencies or special interest groups. Thus, any change in the status quo proposed by governmental agencies would be questioned.

Sources of information for this section include sections of a 1980 survey by ABT Associates, public meetings, and letters from interested persons. Much of the discussion specific to this study area is based on information received from those who took the initiative to make their views known. It is assumed that the attitudes of other area residents would be similar. The importance of these views is reinforced by an Opinion Research Corporation survey completed in 1978. Over 55 percent of a national sample felt the decision about wilderness should be made by the citizens of the states affected.

### State Attitudes Concerning Wilderness

The results of a recent statewide poll (Wallwork 1984) indicate that Montanans overwhelmingly approve of the concept of setting aside certain public and state lands as designated wilderness areas. They like the idea of preserving an area from development so that it will be available to future generations. There appears to be widespread support for established wilderness areas among all kinds of Montanans. Regardless of age, sex, political preference, or place of residence, more than 75 percent of the respondents said they favored wilderness areas. About 40 percent of the Montanans surveyed favored the addition of more wilderness areas in the United States. However, only 25 percent said that Montana needs more wilderness areas. There were no major differences in opinions concerning wilderness between those living in eastern Montana and those in western Montana, where most of the state's wilderness areas area located.

Information on attitudes in Idaho is less current than that for Montana. That information which exists shows similar attitudes toward protecting the environment but less support for the designation of wilderness. Of a sample made in 1978, 55 percent of those Idahoans questioned felt that Idaho already has a sufficient supply of wilderness.

### National Attitudes Concerning Wilderness

National opinion surveys indicate the United States population is divided on the subject of wilderness. In 1977, a study conducted by Opinion Research Corporation (ORC 1977) showed 7 percent of the population thought there was too much wilderness, 32 percent too little wilderness, and 46 percent thought the amount was just right. Those favoring more wilderness said it is needed for recreation, too much land is being lost to business or industry, and wildlife needs more space. Those favoring no additional wilderness felt the land could be better used for buildings, farming, and a growing population. In another survey by Opinion Research Corporation (ORC 1978), Americans rated wilderness fifth (after clean air, clean water, oil, and natural gas) as basic resources in short supply. In a 1979 survey conducted by Cambridge Reports, 39 percent of the U.S. population felt there was already enough wilderness, while 37 percent indicated the need for more wilderness (the remaining 23 percent did not express a preference). The results of these surveys vary because of the changing political and economic climate in the United States and because the questions were phrased differently in each survey. It appears that about 33 percent to 50 percent of the population feels there is currently enough wilderness areas while a similar proportion feels there is a shortage.

### Social Well-being

Indicators of social well-being for the area show the positive and negative factors associated with living in a remote rural area. Negative factors include a higher number of people per physician, a higher proportion of housing without plumbing for exclusive use, and lower per capita income. The positive factors include lower divorce and crime rates and stability in the number of ranches. Information from local residents (see the Local Attitudes and Perceptions section) indicates they feel their area offers a high level of social well-being, and the positive aspects of their lifestyle far outweigh the negative.

# ECONOMIC CONDITIONS

The Centennial Study Area is located in Beaverhead County, Montana and Clark and Fremont Counties, Idaho. Other counties which may be affected by management in the Centennial Study Area are Madison County, Idaho and Madison County, Montana. The primary industries in the area are tied to the development or use of natural resources and government. Principle activities in the area in and around the study area are timber harvest, mining, livestock grazing, and recreation. Population and per capita income for each county are shown in Table 3-7.

The Centennial Study Area is currently used for livestock grazing and recreation, primarily hunting. There is also a potential for mining and timber harvest in the study area. There are a total of 21 grazing allotments with 2,440 AUMs. Approximately 13 of the allotments are for sheep grazing on the Idaho portion. Grazing allotments also increase the value of a ranching operation for resale or for borrowing money. The question of whether all or part of the allotment is in wilderness does not appear to have a significant impact in this area of Montana and Idaho.

Commercial timber harvested in the study area could be sustained at 4.4 mmbf/yr. However, land use plan decisions recommend a 2.64 mmbf/yr timber harvest. Idaho timber is used primarily at mills in St. Anthony and Rexburg, Idaho while the Montana timber would most likely be used by a mill in Dillon, Montana. At 8.49 jobs per million board feet of timber harvest (USDA, FS 1983), a timber harvest of 2.64 mmbf/yr would support 22 jobs.

The primary known mineral deposit in the area is phosphate in the Taylor Mountain area. The pits from previous mining activity and the phosphate lease with above ground disturbance have been excluded from the study area. Given the present domestic supply of phosphate and the projected demand, it is unlikely that these deposits will be mined in the foreseeable future. The geologic favorability for other mineral deposits is low to moderate.

Recreation in the study area is estimated at 5,846 visitor days per year. This use is primarily hunters in the fall. This amount of use supports nearly five jobs per year. Of these recreation days, 1,260 are related to nonmotorized recreation, 596 are related to motorized recreation and 3,990 could be either motorized or nonmotorized. Those categories which could involve either motorized or nonmotorized recreation are hunting, fishing, and tent camping.

The number used in the economic analysis portions of the Environmental Consequences section come from an economic model which looks at actual dollars spent in a five-county area of Idaho and Montana. Income figures are in 1977 dollars.

# WILDERNESS

## Wilderness Diversity (Landform and Ecotype)

The Centennial Study Area is included in the Northern Rocky Mountains Landform Type 401 (Hammond 1964). There are 17 representatives of this landform type presently in the National Wilderness Preservation System totaling 6,962,644 acres. The Forest Service in its June 1978, Draft Environmental Statement, Roadless Area Review and Evaluation (RARE II) did not identify a need at either of two levels of landform representation for further examples of the Northern Rocky Mountains in the National Wilderness Preservation System.

The Centennial Study Area is included in the Rocky Mountain Forest Ecosystem (M3110) according to the Bailey-Kuchler System (Kuchler 1964 and USDA, FS 1976). This is a broad based classification system that does not evaluate site specific vegetative types. Three major ecosystems are found in the Centennial Study Area: Douglas-fir forest

**TABLE 3-7**

**POPULATION AND PER CAPITA INCOME IN COUNTIES NEAR THE CENTENNIAL STUDY AREA**

| State | County | Population 1980 | Population per Sq. Mi. | Per Capita Income 1979 |
|---|---|---|---|---|
| Montana | Beaverhead | 8,186 | 0.6 | $8,662 |
| Montana | Madison | 5,448 | 0.6 | 6,730 |
| Idaho | Clark | 798 | 0.5 | 9,972 |
| Idaho | Fremont | 10,813 | 5.8 | 5,750 |
| Idaho | Madison | 19,483 | 41.2 | 4,669 |

(011); Western Spruce, Fir Forest (014), and Alpine Meadows and Barren (045) (See Appendix F).

The Forest Service in its 1979 RARE II study examined all wilderness and wilderness study areas in the United States for ecotype representation. They then assigned regional ecotype targets as a means of balancing ecotype diversity in the National Wilderness Preservation System. The highest target would have at least six wilderness areas of a specific ecotype. At the date of the RARE II study, there were seven existing wilderness and five Presidentially endorsed areas representing the Douglas-fir Forest ecosystem, sixteen existing wilderness and twelve Presidentially endorsed areas representing the Western Spruce, Fir Forest ecosystem, and fourteen existing wilderness and seven Presidentially endorsed areas representing the Alpine Meadows and Barren ecosystem.

In addition, the Forest Service RARE II study lists 209 potential Douglas-fir Forest representatives to the system, 298 Western Spruce, Fir Forest potential representatives, and 122 Alpine Meadows and Barren potential representatives.

Although adjacent to the Yellowstone Area, the Centennial Study Area does not add to the diversity of that ecosystem. The ecosystems which make up the Centennials are represented elsewhere in the Yellowstone Area.

## Wilderness Opportunities: Proximity to Population Centers

The Centennial Study Area is within a five-hour drive (250 miles) of three industrial population concentrations defined as Standard Metropolitan Statistical Areas by the U.S. Bureau of Census. Billings has a 1980 population of 68,361 and a county-wide (Yellowstone County) population of 107,661. Great Falls has 56,568 people with a metropolitan area population of 80,639 (Cascade County). Boise, Idaho contains 102,125 inhabitants and a metropolitan population of 172,843 people (Ada County).

All Standard Metropolitan Statistical Areas are within a five-hour drive of abundant and diverse designated wilderness areas. There are five areas containing 2,007,269 acres within 250 miles of Billings and thirteen areas totaling 4,381,934 acres within 250 miles of Great Falls. Boise is within range of eight designated wilderness areas totaling 3,250,344 acres. (see Table 3-8).

## Statewide Wilderness Summaries

Appendix G describes the status of all designated wilderness and wilderness study areas, by agency, in the state of Montana. Appendix K describes the status of all designated wilderness and wilderness study areas, by agency, in the state of Idaho.

## Regional Wilderness Analysis

Montana, Idaho, and Wyoming which intersect near the Centennial Study Area are combined into a region for purposes of this analysis. Visitors from this region have good road access to the Centennials, and the most heavily populated areas of all three states are within reasonable driving distance to visit the study area (250 miles or less). Residents of the states have similar economic and social backgrounds and presumably similar demands for wilderness resources.

In the region according to RARE II, there were 28 designated wilderness areas of 9,491,871 acres, 20 units totaling about 3,164,764 acres of administratively endorsed wilderness areas, and 129 wilderness study areas (2,523,054 acres). The further planning and administratively endorsed wilderness area figures are not current because the Forest Service is re-evaluating roadless areas in current forest plans. Many of those plans are either in final form or are soon to be released. Therefore the Forest Service wilderness study area figures are incomplete until all the final plans are published.

Overall, the region has at least 15,179,243 acres in 177 areas either designated wilderness or with the potential of designation. Table 3-9 shows the distribution of designated wilderness areas in the region.

## Several Factors Influencing the Regional Demand for Wilderness

Growth in population will have a major impact on the demand for wilderness. The Centennial Mountains are located in the fast growing northwest region, so increases in demand for all resources available on federal lands including wilderness recreation can be expected.

TABLE 3-8

PROXIMITY OF WILDERNESS TO POPULATION CENTERS

| Status | Population Center | Total Wilderness Acres Within a 5-Hour Travel Time | State | BLM | | Other Agencies | |
|---|---|---|---|---|---|---|---|
| | | | | Number of Areas | Acres | Number of Areas | Acres |
| Statutory Wilderness | Billings, MT | 2,007,274 | Montana | 1 | 6,000 | 3 | 969,786 |
| | | | Wyoming | — | — | 2 | 1,037,483 |
| | Great Falls, MT | 4,387,934 | Montana | 1 | 6,000 | 12 | 3,292,917 |
| | | | Idaho | — | — | 1 | 1,089,017 |
| | Boise, Id | 3,250,344 | Oregon | — | — | 3 | 503,902 |
| | | | Idaho | — | — | 4 | 2,681,775 |
| | | | Nevada | — | — | 1 | 64,667 |

## TABLE 3-9
## REGIONAL WILDERNESS OPPORTUNITIES

| | Designated Wilderness Areas | | | Presidentially Endorsed Areas | | | Further Study Planning Areas | | |
|---|---|---|---|---|---|---|---|---|---|
| State | Agency | Number of Areas | Acres | Agency | Number of Areas | Acres | Agency | Number of Areas | Acres |
| Montana | FS | 12 | 3,360,342 | NPS | 2 | 1,084,660 | BLM | 35 | 438,801 |
| | FWS | 3 | 64,997 | | | | NPS | 1 | 7,645 |
| | BLM | 1 | 6,000 | FWS | 15 | 161,480 | | | |
| | Total | 16 | 3,431,339 | Total | 17 | 1,246,140 | Total | 36 | 446,446 |
| Idaho | FS | 5 | 3,825,069 | | | | | | |
| | NPS | 1 | 42,243 | NPS | 1 | 69,880 | BLM | 58 | 1,534,116 |
| | Total | 6 | 3,867,312 | Total | 1 | 69,880 | Total | 58 | 1,534,116 |
| Wyoming | FS | 6 | 2,193,220 | | | | | | |
| | NPS | 2 | 1,848,744 | BLM | 35 | 542,046 | BLM | 35 | 542,046 |
| | Total | 6 | 2,193,220 | Total | 2 | 1,848,744 | Total | 35 | 542,046 |

FS - Forest Service
BLM - Bureau of Land Management
FWS - Fish and Wildlife Service
NPS - National Park Service

Growing amounts of leisure time should increase participation levels in wilderness recreation, particularly in such activities as sightseeing and camping. Based on information from the Office of Consumer Goods and Service Industries, Americans are increasingly enjoying their affluence in the form of more leisure. Individual workers received an average of 16 days vacation annually, the highest average in history.

The number of women seeking wilderness recreation is increasing. The number of women has more than doubled since 1970 in such activities as cross-country skiing, fishing, and hunting.

A factor that may decrease demand for wilderness recreation is the increasing age of the American population. The median age of America's population was 29.4 years in 1977, in 1990 it is projected to be 32.8, and by 2030 it is expected to reach 39.9. The influence of this trend is a decrease in demand for such wilderness recreation activities as backpacking and primitive camping. Older individuals tend to participate less in strenuous activities and to be more selective of their activities in general.

A factor which may decrease or increase demand for wilderness recreation is fluctuating energy costs. The mobility provided by automobiles has been a key factor in providing access to wilderness areas. Until 1978, recreation participation has been relatively insensitive to rising energy costs. During the period 1979 to 1980 increases in travel costs caused by rising energy prices significantly dampened participation in outdoor recreation.

Increasing personal incomes combined with increased leisure time referenced earlier may increase demand for wilderness recreation.

Changing tastes and preferences also increase demand for wilderness recreation. The environmental movement coupled with increased awareness of the importance of good physical fitness has increased demand for wilderness recreation.

## Wilderness Quality Evaluation

This section examines the quality of the wilderness values found in the Centennial Study Area. Wilderness quality is evaluated by considering five items: size, apparent naturalness, the opportunities for solitude, the opportunities for primitive recreation, and the presence of special features such as outstanding scenic, ecological, geological, educational, or historic values. Although the Centennial Study Area includes lands managed by both the Forest Service and BLM, the wilderness qualities of both agency's lands in the area will be evaluated as a whole.

### Size

The Centennial Study Area includes 72,885 acres. BLM administers 26,371 acres, the Beaverhead National Forest manages 4,474 acres, and the Targhee National Forest administers approximately 42,040 acres. This study acreage does not include approximately 16,650 acres in two separate units managed by the Agricultural Research Service nor does it include two parcels containing approximately 690 acres of Montana state-administered land.

Also not included in the study acreage are several areas excluded during the intensive inventory stage of wilderness review that are within the wilderness study boundaries. These modifications excluded areas of significant human influence on apparent naturalness.

In the vicinity of Taylor Mountains, 1,601 acres have been removed from the study due to open pit phosphate mining, haul roads, and a contiguous terracing project. A half mile to the southeast, another 224 acres have been excluded from the study due to numerous small mining pits and haul roads. On the eastern edge of the study area, two parcels of 64 acres and 300 acres have been removed from the study as they contain obvious contour furrowing and trenching.

In addition to the parcels of nonwilderness land, six cherry-stemmed access roads leading from the boundary of the study area up to the Continental Divide have also been excluded from the study. These cherry-stems include the East Fork of Dry Creek road which leads to the western block of the Sheep Station, the Taylor Creek phosphate mine shaft and road in the center of the study area, the Keg Springs road which leads to the eastern block of the Sheep Station, and the active Tin Cup slate mine and road. Also excluded are two cherry-stemmed roads on the west side, the East Fork of Bean Creek road associated with timber cutting in the Bear Creek drainage and a portion of the Price Peet road.

The southern boundary of the study area falls at midslope and is extremely difficult to locate on the ground as it does not follow either section lines or prominent topographic features as ridges, hills, or creeks. There are numerous crooks and elbows in the southern boundary line.

### Naturalness

The Centennial Study Area, while not totally unaffected by human activity, does appear to be in a natural condition. North of the Continental Divide the Centennial Mountains are rough and rise sharply. This terrain has prevented most human activity. This portion is in a pristine, natural condition. The only signs of development activity are two small cherry-stemmed roads, a well camouflaged Soil Conservation Service snow course, and six short two-wheeled tracks, the longest of which is the remnants of one mile of the Odell, Spring Creek haul road. Table 3-10 gives the location and description of the impacts on the naturalness of the study area. The Impacts on Wilderness Values Map shows the location and size of the development activities. This map can be found inside the back cover.

The study area south of the Continental Divide generally has a natural appearance even though several sites are affected by human activity. The rolling terrain and dense forests have drawn this activity.

Mining, grazing, and timber harvest have created nine vehicle ways and four cherry-stemmed access roads which meet the BLM road definition. Also present are five spring or lake water developments, 670 acres of sagebrush spraying or reseeding projects, and the remains of two small-scale mining ventures, one associated with slate mining and the other with coal mining. The coal mine also has a dilapidated log cabin.

### Solitude

The Centennial Study Area offers outstanding opportunities for solitude. It encompasses the 34-mile uplift of the Centennial Mountains and varies from two to eight miles in width. Forty-eight drainages dissect the study area and elevations vary from 7,000 to 10,000 feet. This results in a diverse topography and vegetation and assures the visitor

## TABLE 3-10

## MANMADE FEATURES WITHIN THE CENTENNIAL STUDY AREA

| Feature | Legal Description | Location | Approximate Length | Remarks |
|---|---|---|---|---|
| Vehicle Way | T15S, R4W Sec. 4, 9 | West Side | 3/4 mi | two-wheel track used for fence maintenance |
| Vehicle Way | T15S, R4W Sec. 3, 10, 15 | West Side | 2-1/2 mi | two-wheel track, follows Peet Creek |
| Vehicle Way | T15S, R4W Sec. 2, 11 | West Side | 1-1/2 mi | two-wheel track extension off end of Price-Peet road |
| Vehicle Way | T14S, R1W Sec. 31 | Center | 1 mi | Odell/Spring Creek haul road constructed in 1950s for phosphate mining |
| Vehicle Way | T15S, R3W Sec. 5 | West Side | 1/4 mi | two-wheel track constructed in 1960s for timber harvest |
| Vehicle Way | T14S, R3W Sec. 28, 33 | West Side | 1 mi | two-wheel track constructed early 1900s for wood hauling |
| Vehicle Way | T14N, R43E Sec. 19, 30 | East Side | 1 mi | two-wheel track logging access road from 1940s, follows Yale Creek |
| Vehicle Way | T14N, R42E Sec. 26 | East Side | 3/4 mi | two-wheel track across to old sheep camp. Follows fork of Hotel Creek |
| Vehicle Way | T14N, R42E Sec. 16, 21, 28, 33 | East Side | 2-1/4 mi | two-wheel track going up Blue Creek to Rheas Peak |
| Vehicle Way | T14N, R40E Sec. 14, 15, 22 | South Side | 1 mi | two-wheel track, unknown use |
| Vehicle Way | T14N, R40E Sec. 16, 22 | South Side | 3/4 mi | two-wheel track, unknown use |
| Vehicle Way | T14N, R40E Sec. 21 | South Side | 3/4 mi | two-wheel track, unknown use |
| Vehicle Way | T14N, R40E Sec. 20, 21 | South Side | 1/2 mi | two-wheel track, unknown use |
| Vehicle Way | T14N, R38E Sec. 11, 13, 14 | Southwest Side | 2 mi | two-wheel track built to access old coal mine. Has been "put to bed" |
| Vehicle Way | T14N, R38E Sec. 14, 15 | Southwest Side | 1/2 mi | two-wheel track spur of coal mine access way |
| SCS Snow Course | T14S, R2W Sec. 26, 27 | Northern edge | N/A | established in 1948. Authorized motorized access to site |
| Spring Development | T15S, R4W Sec. 2 | West Side | N/A | spring box and water tank |
| Spring Development | T14N, R38E Sec. 17 | Southwest Side | N/A | 7 metal water troughs, spring box |
| Spring Development | T14N, R42E Sec. 30 | Southeast Side | N/A | 1940s spring box and metal troughs |
| Lake Development | T14N, R39E Sec. 22 | Southwest Side | N/A | early 1900s small dam on Aldous Lake. Washed out |
| Spring Development | T14N, R42E Sec. 20 | Southeast Side | N/A | 1940 spring box, piping, and metal troughs |
| Vegetative Treatment | T14N, R42E Sec. 19, 20 | East Side | N/A | 20-acre reseeding by airplane in 1956 |
| Vegetative Treatment | T14N, R38E Sec. 14 | West Side | N/A | 350-acre reseeding in 1950 |
| Vegetative Treatment | T14N, R38E Sec. 17, 18 | West Side | N/A | 300-acre sprayed for sagebrush in 1978 |
| Mining Activity | T14N, R38E Sec. 11 | Southwest Side | N/A | old coal mine, small tailings pile, and dilapidated log cabin |
| Mining Activity | T14N, R42E Sec. 6 | South Side | N/A | slate mining claim. Several bulldozer cuts |
| Structure | T14N, R38E Sec. 11 | Southwest Side | N/A | old log cabin, remains associated with old coal mine |
| Fences | Fencelines are scattered throughout portions of the area | | 18 mi | various types and degrees of disrepair |

of the opportunity to avoid encountering others in most of the study area.

The lower elevation foothills contain open forests of mature Douglas-fir, spruce, and lodgepole pine which provide vegetative screening without a sense of confinement. Higher elevations support a varied vegetative mosiac of open meadows, Douglas-fir, whitebark pine, and aspen in the wetter areas. Although rock faces and scree slopes restrict movement in the higher elevations the many drainages permit visitors to remove themselves from others visiting the area.

From some vantage points, especially south of the Continental Divide solitude may be adversely affected by off-site human activities. The center of the study area has been significantly altered by phosphate mining including exploration pits, tailing piles, and haul roads on the south side of Taylor Mountain. These remains may be viewed from a number of locations but especially from the south. About 364 acres of contour furrowing and trenching for watershed restoration occur on the eastern edge of the study area. There are areas of recent timber harvest on the northern, western, and southern edges. Visitors can observe human activity in the 16,650 acres of the Sheep Station or on the roads inside the Red Rock Lakes National Wildlife Refuge but the effect would be diminished by distance from these areas.

From certain vantage points a visitor may be affected by ongoing or past human activities. Generally however, the study area's vegetative and topographical screening, size, and expansive vistas from the study area impart a sense of isolation from the works and presence of human activity.

### Primitive Recreation

The Centennial Study Area provides a diversity of opportunities for primitive and unconfined recreation. Its physical characteristics contribute to some outstanding opportunities for hiking, camping, and horseback riding. The open nature of its numerous drainages and a variety of old trails and vehicle ways allow for enjoyable nonmechanized travel. Views from on top of the ridges and mountains open out to the Teton Range 75 miles to the south and to the Lima Peaks, Gravelly, Snowcrest, and Madison Ranges to the north.

Hunting for elk, deer, moose, and black bear is a popular fall activity, and extensive wildflower displays attract visitors in spring. The Centennials offer good opportunities for wildlife observation and photography of such species as elk, bear, mule deer, moose, eagles, falcons, and hawks. The steep faces and ridges of the north aspect of the Centennial Mountains provide challenging climbs. Cross country skiing is a possible winter activity but is restricted on the north side of the Continental Divide due to difficult access, heavy snowpack, and avalanches. Fishing in the small lakes and streams is presently popular. West slope and Yellowstone cutthroat trout as well as rainbow, brown, and brook trout are found.

In summation, the Centennial Study Area offers diversity and high quality primitive recreation.

## Supplemental Values

The Centennial Study Area contains a large variety of resources of scientific, educational, historic, geologic, and ecologic value.

In 1978, Congress called for the development of the Continental Divide National Scenic Trail. A portion of the Divide between Red Rock Pass to the east of Monida, Montana to the west has been jointly studied by the Forest Service and the Bureau of Land Management for inclusion in the National Continental Divide Trail System. In September 1979, a route was proposed that would traverse the length of the study area and the expected route is presently located.

Archaeological survey of contiguous lands on both sides of the Divide has identified many archaeological sites dating from the late archaic period to the historic Shoshone period. Indians used the Continental Divide for hunting and obtaining lithic material for tools and weapons.

Historic use of the area (1890-1915) included ranching with timber and mining as ancillary activities. The mountains have received use in the early 1900s from several tributary trails off the Monida to Red Rock Pass road; these trails have been used as wood hauling roads and pack trails (Earle 1980).

Cattlemen driving livestock into the valley on the day of the Nation's first centennial, July 4, 1876, named the Centennial Mountains.

Of geologic interest, the Centennials have a prominent fault scarp that is exposed along the north face of the range. In some places this scarp rises over 3,000 feet in one mile. Other cross faults divide the range into segments; the largest of these is near Odell Creek. Evidence of numerous avalanches and quakes can be seen.

The study area contains a large diversity of vegetative habitat types. Three hundred sixty-two taxa of vascular plants were identified during an inventory in 1979 (Lowry 1979). With a yearly precipitation of 30 inches in the mountains, there are beautiful wildflower displays every summer.

The Centennial Mountains provide habitat for elk, moose, and black bear. The study area offers cover and seclusion and the high country meadows are usually lush with forbs into the late fall. Although elk move out of the study area when the snow gets deep, some moose use it yearlong. During winter they often remain in the many sheltered basins along the Divide, browsing on the alpine fir. Black bear are commonly observed.

Several fur bearing species inhabit the study area. Beavers are active in several drainages. Martin and wolverine are occasionally sighted.

Two threatened and endangered species of wildlife use the study area. Grizzly bears have occasionally been sighted. Montana's only nesting peregrine falcons now inhabit the study area and may be expected to increase in numbers. Other raptor species including the bald eagle are commonly seen. The Targhee National Forest established a peregrine hack site in 1986 in the eastern end of the study area and birds are being reintroduced.

The study area is part of the watershed for the Red Rock Lakes Wilderness and National Wildlife Refuge, which contains one of the last remaining stream population of native grayling in Montana. The refuge also has both a breeding and wintering population of Trumpeter Swan.

The outstanding vistas offered from the high country constitute a significant visual resource. To the south, the Snake River Plateau extends uninterrupted for 150 miles.

To the southeast 75 miles away, the Tetons, and most dramatically, the Grand Teton stand out on the horizon. Seventy-five miles to the west is the Lemhi Range. To the north, the horizon is full of peaks including mountains in the Gravellys, Snowcrests, and Madison Ranges of Montana.

In summary, the study area contains ecological, geological and other features of scientific, educational, scenic or historical value.

# CHAPTER 4
# ENVIRONMENTAL CONSEQUENCES

## INTRODUCTION

This portion of the document is designed to disclose the effect of each alternative on the Centennial Mountains Study Area's resources. Whereas Chapter 2 describes how the entire study area will be managed given selection of a particular alternative, Chapter 4 attempts to disclose the degree of change from the area's existing state brought about by implementation of each alternative. The effects of wilderness and nonwilderness management on wilderness values and on local economics, although not included in the description of alternatives in Chapter 2, are examined as issues in Chapter 4.

## ANALYSIS ASSUMPTIONS

The following assumptions were used by the interdisciplinary team in determining impacts.

The assumptions underlying the timber suitability for harvest and volume figures are contained in Appendix I, the Timber Production Potential in the Centennial Mountains.

Management of the study area will be according to the direction in existing plans if the area or portions of the area are not recommended for wilderness. The implication of existing management direction is described briefly below by administrative unit.

*Targhee National Forest.* The study area will remain essentially undeveloped. Wilderness values will generally be maintained.

*Bureau of Land Management.* East of Matsingale Creek, the study area will remain essentially undeveloped and wilderness values will generally be maintained. West of Matsingale Creek some timber harvest and mineral exploration will occur and wilderness values will be lost on portions of the area. (See the Matsingale Creek Boundary Map.)

*Beaverhead National Forest.* Wilderness values will generally be maintained.

No timber harvest will be scheduled on the Targhee or Beaverhead National Forests or eastern portions of the BLM for the foreseeable future.

Phosphate leases in the study area represent a prior existing right and may or may not be developed in the foreseeable future depending upon market conditions and reserve supplies.

If all the study area or a portion of it is recommended wilderness, oil and gas leases within the area represent a prior existing right and could be explored and developed up to the point that the leases expire. No reissue of prior leases or issue of new leases would occur after that time.

The only development activities which might affect unstable soils on the Targhee or Beaverhead National Forests or on the eastern portion of the BLM would be mineral development. Both timber harvest and mineral development activities would adversely affect unstable soils on public lands west of Matsingale Creek. It is considered that timber harvest is likely to occur but mineral development is not likely to occur in the foreseeable future.

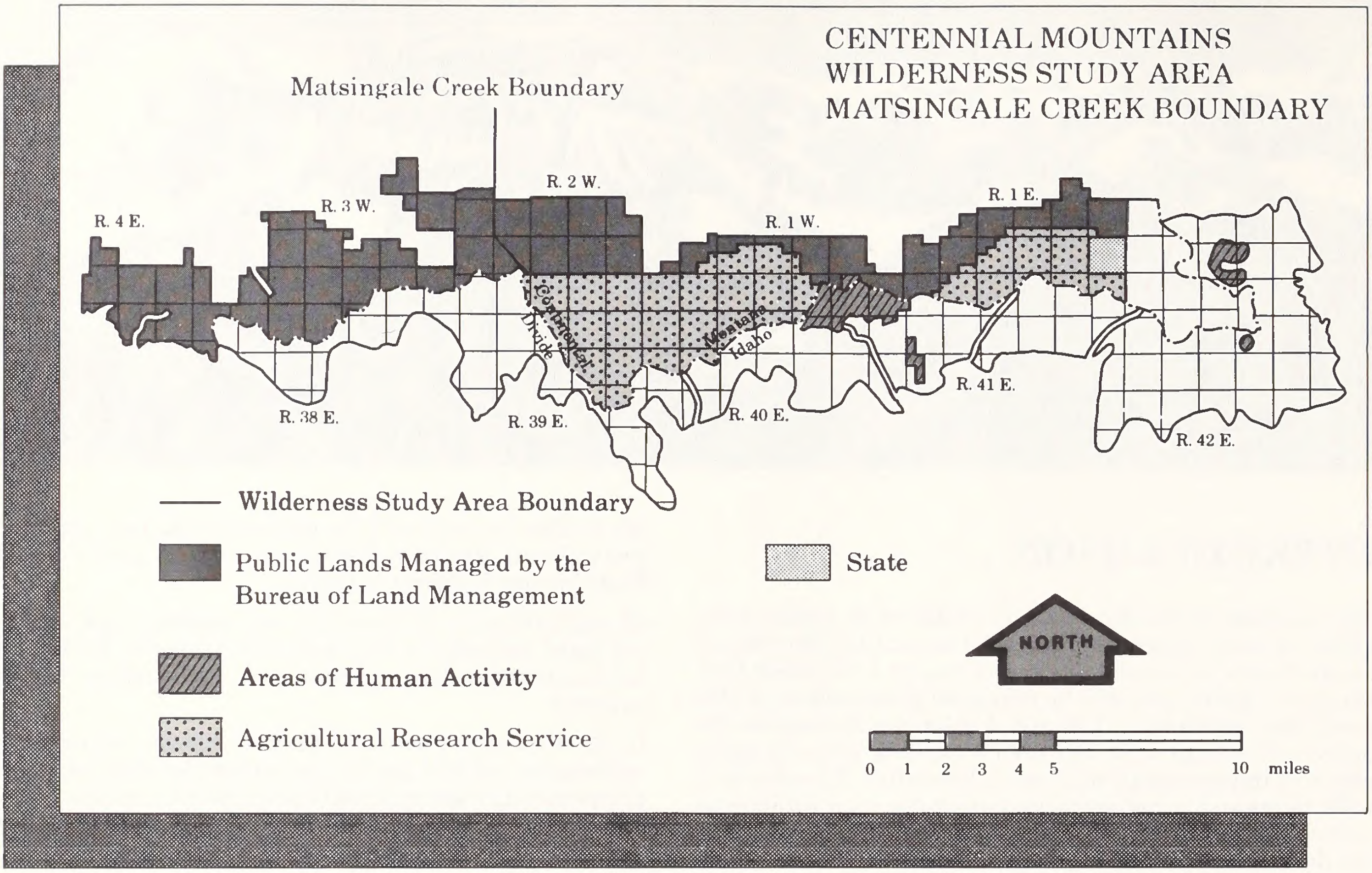
In order to comply with the Dillon *Management Framework Plan* concerning watershed protection, any future oil and gas leases on lands west of Matsingale Creek will carry a stipulation prohibiting surface occupancy.

The zone of economic influence is considered to be Madison and Beaverhead counties in Montana and Fremont, Madison, and Clark counties in Idaho.

Wilderness designation may aid in the long-term maintenance of important elk habitat and watershed resources important to aquatic wildlife and waterfowl.

The designation of a block of land as wilderness does not automatically infer either benefit or detriment to wildlife. A large block of land without vehicle access provides a secure area for wildlife. On the other hand, the lack of vehicle access to a large block of land often precludes many wildlife management projects such as vegetative manipulation. Any wildlife projects precluded because of wilderness designation of a large tract of land are discussed by alternative.

Designation would also protect native vegetation through restricting mechanical land treatments or reducing the introduction of non-native plants. Restricting vehicle use would protect those cultural artifacts that could be



removed by vehicle. Wilderness would ensure the maintenance of scenic values by requiring that all new projects blend into the natural landscape. Watersheds would be protected by the careful placement of water developments and surface disturbances. All types of wilderness compatible nonmotorized recreation including hiking, horseback riding, walk-in hunting, fishing, and sightseeing would be enhanced by wilderness designation.

Assuming fire is allowed to play its natural role if the study area is designated wilderness, wildfires would expand the forage base for game and livestock by opening up the canopy and permitting earlier successional stages to occur in the fire-altered areas. Use of this forage by wildlife and livestock would be a management decision.

Restrictions on vehicle access resulting from wilderness designation would prevent loss of forage from soil compaction and would decrease the risk of livestock rustling.

The elk habitat on the timbered Montana slopes is important in the fall because the elk gather in the Centennials before migrating. However, the elk are not likely to gather in a logged area. Therefore, logging would affect hunting. The Montana Department of Fish, Wildlife and Parks would likely control hunting pressure on the remaining elk.

# ALTERNATIVE 1, PROPOSED ACTION

## Effects on Wilderness Values

Wilderness values would remain undisturbed on 26,248 acres. A total of 46,637 acres would not be designated wilderness.

On the portion recommended for wilderness, natural values and outstanding opportunities for solitude and primitive recreation would remain undisturbed. Wilderness designation would preserve the study area's special features such as cultural values, security cover, and threatened and endangered wildlife habitat. Wilderness designation of the north face of the Centennials would enhance the wilderness characteristics of the adjacent Red Rock Lakes National Wildlife Refuge.

Occasional maintenance on a spring development and periodic off road vehicle use on the Price Peet and Bean Creek roads and on 2.5 miles of internal vehicle trail may occasionally disturb wilderness values. The vertical, heavily vegetated topography north of the Divide precludes most unauthorized vehicle use.

Development activities on adjacent nonwilderness lands, such as the state-owned section, the Sheep Station, or the phosphate mining leases, would affect the wilderness characteristics of the lands recommended for wilderness. No access roads through the study area would be required to get to any of these sites, but development could occur over the long term. The area's narrow width overlooking the Centennial Valley makes it vulnerable to development activities on private land and on Red Rock Lakes. Such development is unlikely at present. Monitoring operations during winter on the Soil Conservation Service (SCS) snow course would cause minor occasional impacts on solitude values. The map just inside the back cover shows the location of the sites where development activity may adversely affect wilderness values.

On lands not recommended for wilderness, wilderness values will generally be retained. However in several portions, wilderness values may be degraded or destroyed in the long term.

In the 3,000-acre portion on the northwestern edge which will likely be logged, wilderness values will be lost for the foreseeable future. The Tin Cup decorative building stone claim operates under an approved mining plan and will be in existence over the long term. Mining operations will adversely affect wilderness values near the 160 acres of the claim, especially if mining activities spread to the 80 acres inside the study area.

A more severe impact on wilderness values will be the eventual renewal of development on the 850 acres of phosphate lease inside the study area. This lease is producing and has an indeterminate lifespan based on a continuation of rental payments by the lessee. Broad scale development would adversely affect wilderness characteristics on the south side of the Continental Divide.

### Conclusion

Wilderness designation of 26,248 acres would preserve wilderness values and maintain scenic, recreational, and cultural resources. This alternative would protect the wilderness resources of Red Rock Lakes National Wildlife Refuge.

Activities on adjacent state lands, the Sheep Station, and privately owned lands to the north; periodic maintenance of an SCS snow course and a spring, a phosphate lease, and cherry-stemmed roads to the south all have the potential for adversely affecting wilderness characteristics. The narrow width and north face orientation of the area makes it vulnerable to offsite development to the north but this appears unlikely at present.

On the 46,637 acres not recommended for wilderness, timber harvest on 3,000 acres, decorative stone mining on 160 acres, and phosphate mining on 850 acres with an indirect effect on several thousand more acres could adversely affect wilderness values.

## Effects on Recreation Activities and Use Levels

On the lands recommended for wilderness, 100 snowmobiling visitor days may be lost, while primitive recreation opportunities would be enhanced on 26,248 acres. On the portion of the study area not recommended wilderness, opportunities for primitive recreation would remain at present levels because the land would retain its wilderness characteristics.

Wilderness designation would maintain the existing, quality primitive recreation values associated with hiking, backpacking, cross-country skiing, climbing, horseback riding, photography, nature study, hunting, and fishing on 26,248 acres. Big game hunting, specifically elk hunting, would benefit from maintenance of wildlife security habitat. Wilderness designation would increase the public awareness of the Continental Divide Trail and increase the probability that it would be constructed. Present scenic values would be maintained.

The Odell Creek Canyon loop trail would be closed to snowmobiles. All wheeled vehicle and snowmobile use on 26,248 acres would be eliminated. Approximately 5,675 acres considered appropriate for snowmobile use would still be available. Two miles of existing primitive trail in Montana, which is presently closed seasonally or year-round to motorized vehicles, would be permanently closed. Closing the area to motorized vehicles would cause a loss of 100 visitor days from the present level of use. Table 4-1 shows expected changes in recreation.

TABLE 4-1

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 1

| Recreation Activity | Present Use (RVDs) | Alternative 1 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,680 | 0 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 496 | -100 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

Impacts to potential recreation vehicle access would depend on the amount, type, and location of roads which would be generated by resource development under non-wilderness designation. It is likely that new roads would receive seasonal or yearlong vehicle restrictions, or would be rehabilitated and returned to the contour, even if the study area is not designated wilderness. The net effect of wilderness designation would be a moderately adverse impact on potential motorized recreation access.

Wilderness designation would result in a short-term increase in recreation use which would quickly return to predesignation use levels. There would be no long-term increase in recreational use due to wilderness designation. The existing mix of uses, with the exception of snowmobiles, would continue.

For portions of the study area not recommended for wilderness, primitive recreation values may be adversely affected by development activities on the far northwestern end.

### Conclusion

Wilderness designation would enhance all primitive forms of recreation. It also would increase the public awareness of the Continental Divide Trail. A total of 26,248 acres would be closed to motorized vehicles, and a primitive trail already closed seasonally or year-round would be permanently closed. Closure to snowmobiles would result in a loss of 100 visitor days of snowmobile use. There would be an unquantifiable loss of recreation vehicle access on roads that would have resulted from development activity.

On lands not recommended for wilderness, primitive recreation values may be adversely affected in the far northwestern end which is subject to timber harvest.

## Effects on Wildlife Habitat

On the portion recommended wilderness, 26,248 acres of wildlife habitat and watershed that supplies wetland areas would remain undisturbed by development activities as well as 10,700 acres of elk fall and migrational staging habitat. On the portion not recommended for wilderness, 2,500 acres of elk fall and migrational staging habitat and 3,000 acres of winter elk habitat may be disturbed in the short term by timber harvest.

Wilderness designation of an additional 10,700 acres north of the Divide not already protected by the Dillon Management Framework Plan would have positive impacts upon habitats for elk, fisheries, wolverine, grizzly bear, Canada lynx, accipiters (sharp-shinned hawk, Cooper's hawk, goshawk), spruce grouse, and offsite bald eagle and waterfowl habitat.

Elk would be assured of fall hiding cover effectiveness on about 10,700 acres in the northwestern portion, which presently serves as migrational staging, late fall, and early winter habitats for 300 to 500 elk. Cover effectiveness reduces hunting impact upon the bull elk population and provides both hiding cover and thermal cover. Loss of cover due to timber harvest or mineral development could bring about a more restrictive hunting season, plus a short-term (25 to 30 years) displacement of elk in fall and winter until cover is restored. Elk would also be assured of good cover values on 62,714 acres of summer habitat.

A total of 26,248 acres of Centennial Valley watershed would remain undisturbed providing positive effects on fishery, offsite waterfowl (including trumpeter swan), and offsite bald eagle habitats. Erosion and sedimentation would not be accelerated by mining, logging, and road building.

Accipiters would benefit from the high conifer canopy and tree density for nesting, while spruce grouse would benefit from successionally advanced conifer stands. Grizzly bear, wolverine, and lynx would benefit from adequate cover and a remote, roadless environment. Most adverse effects upon these species stem from their incompatibility with human activities.

The 26,248 acres recommended for wilderness are adjacent to 25,300 acres of Situation 2 grizzly bear habitat which is not recommended as wilderness. Situation 2 habitat contains important grizzly bear components but is unoccupied. The wilderness recommendation benefits the bear by reducing human-bear conflicts which are associated with development activities.

There would be minor adverse impacts to black bear, mule deer, moose, and blue grouse whose habitat is enhanced by logging. These species prefer some successional vegetation in their range as important food-producing areas. These species also make use of edge habitats. Moose and black bear probably would benefit most by logging, so long as sufficient old-growth timber were retained for cover. Since both species are currently abundant and have good quality habitats, the loss of this potential is not significant. Mule deer populations are presently limited by the condition of their winter habitat outside the study area; consequently, enhancement of summer habitat would not affect the population.

The introduction of mountain goats may not be allowed if they are classed as an exotic species to the study area. Wilderness management guidelines preclude introduction of exotic species, but allows management of established exotics when they enhance wilderness character. The Dillon Resource Area Management Framework Plan recommended that mountain goats be introduced in the Centennial Mountains. Because mountain goats may not be native to the Centennials the release of the goats could be in jeopardy if the study area were designated wilderness.

On lands not being recommended for wilderness, 2,500 acres of elk fall and migrational staging habitat and 3,000 acres of elk winter habitat would be logged which at least in the short term would displace elk use. West slope cutthroat trout habitat in the northwestern end would be adversely affected in the short term from increases in siltation caused by logging and road building on about 2,500 acres. However on most of the study area not recommended wilderness south of the Divide, wildlife values would not be affected.

### Conclusion

On the portion not recommended wilderness 2,500 acres of elk fall and migrational staging habitat and 3,000 acres of undisturbed by development activities. The 26,248 acres recommended for wilderness is occasionally visited by the grizzly bear. Of the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986) none will be recommended for wilderness. A total of 26,248 acres of drainage feeding onsite and offsite wetlands on the Montana side would continue to produce the existing low levels of sediment.

On the portion not recommended wilderness, 2,500 acres of elk fall and migrational staging habitat and 3,600 acres of elk winter habitat would be logged. The logging would adversely affect cutthroat trout habitat by increasing erosion and sediment production. However, on most of the lands not recommended wilderness wildlife values would remain the same.

## Effects on the Range Resource

Wilderness designation on 26,248 acres would have little effect on livestock grazing. On the 46,637 acres not recommended wilderness there would be a 13 percent increase in livestock grazing.

On the portion designated wilderness, timber harvest would be precluded. Because of reduced timber harvest which affects transitory range and livestock management flexibility, 50 AUMs of a possible 100 AUM increase would be achieved on public lands. The Targhee National Forest's planned increase of 275 AUMs could be achieved.

Wilderness policy and existing fire management plans may result in more timber burned and vigorous forage production. More forage production allows more flexibility to meet livestock management goals whether or not such an increase in forage is made available for livestock.

On the portion not recommended for wilderness there would be no affect on the range resource. Access to the Sheep Station from the south will be maintained.

### Conclusion

Wilderness designation would preclude logging which creates transitory range that could support 50 additional AUMs for livestock grazing north of the Continental Divide. However, there would be an increase over present use of 325 AUMs over the long term. There would be no significant impact on the permittee's use of vehicles because primitive means of transportation are used for livestock grazing management. Increases in forage from allowing wild fires to burn would allow greater livestock management flexibility.

## Effects on the Timber Resource

If 26,248 acres are designated wilderness, 99.3 mmbf of timber will be foregone long term on 10,200 acres of suitable timber north of the Divide. This is 77 percent of the timber designated for harvest in existing land management plans. In addition, wilderness designation would restrict the agency's ability to control the spread of destructive insects and disease. There would be no effect on the portion not recommended wilderness. Table 4-2 shows the relative amounts of timber available and foregone in Alternative 1.

### TABLE 4-2

### TIMBER RESOURCE IN ALTERNATIVE 1, THE PROPOSED ACTION

| | Foregone | Available |
|---|---|---|
| Suitable Timber | 10,200 acres | 3,000 acres |
| Standing Volume | 99.3 mmbf | 29.2 mmbf |
| Annual Yield | 2.04 mmbf | 0.6 mmbf |

**Conclusion**

A total of 2.04 mmbf of annual yield will be foregone on 10,200 acres north of the Divide. There would be no effect on the timber resource in those portions not recommended wilderness.

## Effects on Mineral and Energy Development

On the portion recommended for wilderness, designation would reduce opportunities in the long term to explore and develop oil and gas resources on 26,248 acres rated low to moderate in geologic favorability. There would be no effect on mineral exploration opportunities on 46,637 acres.

In the short term, designation would result in restrictions on exploration and development. Prior existing mineral rights will be honored on 6,507 acres of lease inside the area recommended wilderness. Wilderness designation would preclude the issuance of 1,510 acres of lease applications and pending simo tracts. There are no existing locatable mineral claims.

Mineral exploration and development on the 46,637 acres not recommended would be governed by existing land management plans. Therefore, no additional impacts would occur. The 850 acres of phosphate leases located outside the study area could be developed at any time under prior existing rights.

**Conclusion**

Wilderness designation would restrict oil and gas exploration on 6,507 acres of leases in the short term, issuance of 1,510 acres of lease applications and pending simo tracts in the short term, and exploration and development of 26,248 acres of low to moderate geologic favorability in the long term.

On the portion not recommended wilderness, there would be no effect on the minerals resource.

## Effects on Unstable Soils

A total of 16,811 acres of unstable soils may be disturbed by development activity, while 18,492 acres would remain undisturbed.

In the portion designated wilderness, 10,082 acres of unstable soils would remain undisturbed. Existing levels of soil erosion, slumping, and water quality would continue. No soil stabilization projects using motorized equipment would occur. If existing oil and gas leases were developed, 5,514 acres of unstable soils may be disturbed. Since such development is not likely under present market conditions, potential disturbance is minimal during the life of the lease. Some exploration may occur using explosive charges.

In the portion not designated wilderness, 11,297 acres of unstable soils may be disturbed by oil and gas or logging activity. The affects of road building and logging north of the Divide could significantly affect soil stability, water quality, and silt deposits in irrigation reservoirs such as Lima Reservoir. Impacts would be mitigated by Best Management Practices (see Appendix L). A total of 8,410 acres of unstable soils would remain undisturbed.

**Conclusion**

Erosion and slumping would continue at present levels on 18,492 acres of unstable soils. Levels of erosion and slumping may increase on 16,811 acres of unstable soils if development activities occur.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-3 lists the impacts of Alternative 1 relative to the projections for the No Wilderness Alternative.

### Conclusion

The annual timber harvest on lands not recommended for wilderness could support five jobs. In addition, 15 jobs in ranching and recreation may be sustained.

This alternative would sustain $344,365 of annual income to the local economy from all economic activities.

TABLE 4-3

ECONOMIC IMPACTS OF ALTERNATIVE 1

| | Projected Annual Employment 1995[1] | | Projected Annual Income 1995 | |
|---|---|---|---|---|
| Economic Resources | Alternative 1 | No Wilderness Alternative | Alternative 1 | No Wilderness Alternative |
| Timber Harvest | 5 | 22 | $118,260 | $520,344 |
| Recreation | | | | |
| Snowmobiling | 7 | 8 | 77,078 | 92,618 |
| Elk Hunting | 3 | 3 | 28,944 | 26,784 |
| Livestock | 5 | 5 | 120,083 | 123,020 |
| Total | 20 | 38 | $344,365 | $762,762 |

[1] Units in person years

# ALTERNATIVE 2, ALL WILDERNESS

## Effects on Wilderness Values

Wilderness values would remain undisturbed on 72,885 acres. The study area's special features such as cultural values, security habitat, and threatened and endangered wildlife habitat would also remain undisturbed; as would the Red Rock Lakes Wildlife Refuge watershed.

Wilderness designation of the entire study area could result in several short and long term effects on wilderness values. The Tin Cup decorative building stone claim operates under an approved mining plan and would be in existence over the long term. Mining operations would adversely affect wilderness values nearby the 160 acres of the claim, especially if mining activities spread to the 80 acres inside the study area. The map just inside the back cover shows the location of the sites where development activities may adversely affect wilderness values.

A more severe impact on wilderness values would be the eventual renewal of development on the 850 acres of phosphate lease inside the study area. This lease is producing and has an indeterminate lifespan based on a continuation of rental payments by the lessee.

The watershed contour furrowing projects on the southeast side totaling 364 acres causes a long term visual impact on the naturalness of the study area. The furrowing can be seen from the 3,000 acres surrounding the furrowing projects.

Six cherry-stemmed roads totaling 11.25 miles adversely affect wilderness values on about 2,000 acres. The majority of these roads penetrate from the south side and provide access for motorized vehicles which may disrupt solitude.

Within the boundaries are 690 acres of Montana State-owned land and 16,650 acres of the Sheep Station. Although the State of Montana may exchange this land to the BLM in the future, at present BLM has no authority over either the state land or the Sheep Station.

The southern boundary of the study area is fringed by clearcuts and lacks defineable topographic borders. The boundary situation, along with the six cherry-stemmed roads, creates a potential for year-round motorized vehicle access and disruption of wilderness values. The flat, open terrain along the Continental Divide makes off road vehicle control difficult, thus violations of the wilderness boundary are likely.

### Conclusion

Wilderness values and scenic, recreational, and cultural resources would remain undisturbed by development activity. Adverse effects on wilderness values would include building stone mining on 80 acres within the study area, phosphate removal on 850 acres, the visual impact on 3,000 acres surrounding the contour furrowing projects, and continued vehicle use of 11.25 miles of cherry-stemmed roads. Southern mid-slope boundaries, 690 acres of Montana State-owned land, and 16,650 acres of the Sheep Station may adversely effect wilderness values in the long term.

## Effects on Recreation Activities and Use Levels

Wilderness designation would maintain the high quality primitive recreation associated with hiking, backpacking, cross-country skiing, climbing, horseback riding, photography, nature study, hunting, and fishing on 72,885 acres. Big game hunting, specifically elk hunting, would benefit from maintenance of wildlife habitat. Wilderness designations would increase the public awareness of the Continental Divide Trail. Present scenic values would be maintained.

Snowmobiling and off road vehicle use would be adversely affected. The National Forest lands are already closed to all motorized vehicles except snowmobiles so only snowmobiling would be adversely affected. On public lands, 22,511 acres contain year-round vehicle restrictions to protect recreation, watershed, and wildlife habitat values. About 3,860 acres in the northwestern portion, which is presently open to vehicles on existing roads during the summer and fall, would be closed year-round.

About seven miles of existing primitive trails now subject to various vehicle restrictions would be permanently closed.

The most severe impact to snowmobile use would involve the denial of access through Odell Creek Canyon (T14S, R1W, Sec. 31). This access is part of a loop route from Island Park, Idaho, over the Centennial Mountains, and then back to Island Park via Red Rock Pass. Closure of the entire study area to snowmobiles would result in a loss of 596 recreation visitor days of snowmobile use. About 6,350 acres of suitable snowmobile terrain would be closed.

Impacts to potential recreation vehicle access routes would depend largely on the amount, type, and location of roads which would have been generated by resource development if the area were not wilderness. It is likely that such roads would have received seasonal or yearlong vehicle restrictions, or would have been rehabilitated and returned to the contour. The net effect of wilderness designation would be a moderately adverse impact on potential motorized recreation access.

Wilderness designation would initially result in a short-term increase in recreation use which would quickly return to predesignation use levels and trends. There would be no long-term increase in recreational use due to wilderness designation. The existing mix of uses, with the exception of snowmobiling, would continue.

Table 4-4 shows the expected changes in recreation.

TABLE 4-4

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 2

| Recreation Activity | Present Use (RVDs) | Alternative 2 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,680 | 0 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 0 | -596 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

### Conclusion

Wilderness designation would enhance primitive forms of recreation, especially big game hunting. Wilderness designations would increase the public awareness of the Continental Divide Trail. About 3,860 acres not already closed to wheeled vehicles would be permanently closed. Seven miles of existing primitive trails with partial vehicle use restrictions would be permanently closed to wheeled vehicles. Wilderness designation would lead to the loss of 596 recreation visitor days of snowmobile use. There would be an unquantifiable loss of potential recreation vehicle access that would have resulted from development activity.

## Effects on Wildlife Habitat

Wilderness designation would have significant, positive impacts upon habitats for elk, fisheries, wolverine, grizzly bear, Canada lynx, accipiters (sharp-shinned hawk, Cooper's hawk, goshawk), and spruce grouse. It would also have positive impacts on fishery, waterfowl, and bald eagle habitats in the Centennial Valley.

Elk would be assured of fall hiding cover effectiveness on about 13,200 acres in the western portion, which presently serves as migrational staging, late fall, and early winter habitats for 300 to 500 elk. Cover effectiveness reduces hunting impact upon the bull elk population and provides both hiding cover and thermal cover. Elk would also be assured of good cover values on 3,600 acres of winter habitat, and 72,885 acres of summer habitat.

There would be positive effects on fishery, offsite waterfowl (including trumpeter swan), and offsite bald eagle habitats if 30,845 acres of watershed north of the Divide is designated wilderness. Erosion and sedimentation would not be accelerated by mining, logging, and road building.

Accipiters would benefit from the high conifer canopy and tree density for nesting, while spruce grouse would benefit from successionally advanced conifer stands.

Grizzly bear, wolverine, and lynx would benefit from cover values and a remote, roadless environment. Most adverse effects upon these species came from their incompatibility with development activities.

The 72,885 acres recommended for wilderness include 25,300 acres of Situation 2 grizzly bear habitat. The wilderness recommendation benefits the bear by reducing human-bear conflicts which are associated with development activities.

Wilderness designation would adversely affect black bear, mule deer, moose, and blue grouse by prohibiting logging. These species prefer some successional vegetation in their range as important food-producing areas. These species also make use of edge habitats. Moose and black bear probably would benefit most by logging, so long as sufficient old-growth cover were retained. Since both species are currently abundant, and have good quality habitats, the loss of this potential is not significant. Mule deer populations are presently limited by the condition of winter habitat outside the study area; consequently, enhancement of summer habitat would not affect the population. Most projects to improve wildlife habitat would be precluded by wilderness designation.

The Dillon Resource Area Management Framework Plan recommended that mountain goats be introduced in the Centennial Mountains. Because mountain goats may not be native to the Centennials, the release of the goats may be incompatible with wilderness designation.

Wilderness designation would allow the enhancement of stream habitats artificially through use of structures as long as no motorized vehicles were required. Potential for habitat enhancement is low, however.

### Conclusion

A total of 72,885 acres of wildlife habitat would remain undisturbed by development activity. Key species such as elk, cutthroat trout, threatened and endangered species, and species of special interest would benefit. Wilderness recommendation for 30,845 acres of watershed for the Centennial Valley would benefit fish and wildlife, especially the arctic grayling, bald eagle, and trumpeter swan.

## Effects on Range Resources

Wilderness designation would have adverse impact on increased livestock grazing to the north of the Continental Divide. The Beaverhead National Forest does not manage for livestock on its 4,474 acres and would not be a factor. A potential increase of approximately 100 AUMs would not be available on transitory range which would result from timber harvest on the west side of the study area. This potential increase in livestock grazing would be foregone in the short term.

Wilderness designation would have a greater impact on grazing south of the Divide. The *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b) has identified a potential increase of 275 AUMs on allotments by the year 2030 based on forage yields. Structural and nonstructural range improvements would be necessary to support this increase in AUMs. Under wilderness designation, new range improvements would not be permitted;

therefore an increase in livestock grazing would be foregone.

BLM grazing policy in wilderness allows for the use of motorized vehicles for use in maintenance and construction of rangeland improvements, where such use is the minimum necessary, and allows vehicle hauling of large quantities of salt or fencing to central distribution points. The policy generally forbids the use of motorized vehicles for routine monitoring of livestock. Wilderness designation would have an adverse affect only in the Peet Creek allotment on the west side of the study area where salting programs and the construction of one-half to one mile of new fence would be restricted or complicated by the controls on vehicle use. The likely impact would be increased time or increased costs for salting and fencing.

On Targhee National Forest lands, livestock permittees would have higher costs for allotment management since motorized vehicles and equipment would not be allowed inside wilderness boundaries. Maintenance of existing improvements, facilities, and trails would require hand powered tools and equipment. Sheep camps could no longer be pulled to the higher elevations by motorized vehicles making it necessary to bring in all camp necessities with pack animals. Communications with herders would be more difficult. Salt for livestock would be brought in on pack animals. Some routine allotment and livestock inspection would require more time due to horse or foot travel.

A positive impact on livestock grazing will occur as forage is created when wild fires are allowed to burn naturally over large areas. A larger forage base allows more flexibility in livestock management whether such an increase in forage is assigned to livestock or not.

### Conclusion

The opportunity to increase livestock grazing by 375 AUMs over present use would be foregone by wilderness designation. Depending on degree of dependency on motorized vehicles, livestock permittees would require increased time or increased costs in construction and maintenance of range improvements and monitoring. A policy of allowing wildfires to burn in wilderness areas would increase forage and allow greater livestock management flexibility.

## Effects on the Timber Resource

Alternative 2 would eliminate all timber harvest within the study area. The *Dillon Resource Area Management Framework Plan* (USDI, BLM 1979) would permit timber harvest on 13,200 acres to the west of Matsingale Creek if the study area is not designated wilderness. For both the *Beaverhead National Forest Plan* (USDA, FS 1986b) and *Land Management Plan for the Targhee National Forest* (USDA, FS 1985b), no programmed sales are planned. The lands to the east of Matsingale Creek are not used to calculate impacts on timber. A total of 2.64 mmbf annual yield is foregone if the entire study area is designated wilderness. (See Table 4-5). In addition wilderness designation would restrict management options in controlling forest infestation and disease.

### Conclusion

A total of 2.64 mmbf of annual yield would be foregone on 13,200 acres north of the Divide.

TABLE 4-5

TIMBER RESOURCE IN ALTERNATIVE 2

| | Foregone | Available |
|---|---|---|
| Suitable Timber | 13,200 acres | 0 acres |
| Standing Volume | 128.5 mmbf | 0 mmbf |
| Annual Yield | 2.64 mmbf | 0 mmbf |

## Effects on Mineral and Energy Development

Wilderness designation would restrict exploration and development of 12,785 acres of oil and gas leases. The geologic favorability for oil and gas is rated moderate west of Odell Creek and low east of Odell Creek. The leases all would be subject to special stipulations designed to protect wilderness values. Neither the 1,221 acres of lease applications nor the 8,045 acres included in simo tracts would be leased if the area were designated wilderness. The end result is a significant decrease in the legal opportunity for lessees to explore and develop their leases. The probability that the lessees would actually use their lease rights is quite low. Exploratory drilling in the Northern Rocky Mountains currently has slowed due to increased international supply; however, this is likely only a short-term situation. With the exception of a few exploratory wells outside the study area boundaries, little interest has been shown in the study area.

In the short term, there would be little impact on oil and gas. However, as leases expire, they would not be reissued. At that point all further exploration and development would be precluded even if national supplies of oil and gas decreased.

Any discovery of oil or gas before this time would be developed subject to existing lease stipulations. The lease would then remain in effect for the life of production.

Phosphate development on 1,647 acres (850 acres of which are in the study area and the rest which is enclosed by the study area) would not be affected as the leases constitute a valid existing right. Development is unlikely in the near future as virtually all the phosphate accessible by surface mining has been removed and underground mining may be uneconomical well into the future.

The wilderness boundary includes 80 acres of the 160-acre Tin Cup claims. Wilderness designation would have no immediate impact on operations on the claims. The operator has valid existing rights to explore and develop the claims. However, operations may be affected in the future should the operator expand into the wilderness area. A plan of operations would then be required including controls on the use of motorized equipment and required reclamation measures.

### Conclusion

Wilderness designation would restrict oil and gas exploration and development on 12,785 leased acres during the life of the leases and preclude it on the entire portion recommended for wilderness after the leases expire. The geologic faborability for locatable minerals is low to moderate and there are no valid existing claims at present. About 8,045 acres of simo tracts and 1,221 acres of lease applications would not be leased. Any expansion of operations on the Tin Cup building stone claim would be subject to more restrictive environmental mitigation than is presently required. Complying with these measures may cost the operators additional time or money.

## Effects on Unstable Soils

A total of 11,761 acres of unstable soils may be disturbed by development activities, while 23,542 acres should remain in its present condition.

Oil and gas development on existing leases may continue even after the area is designated wilderness. A total of 11,761 acres of these leases lies on unstable soils. However, little interest has been shown in developing these leases. Therefore, while impacts of oil and gas activities could cause soil erosion and slumping, such impacts are not likely to occur.

Soil stabilization projects or watershed project maintenance will not be undertaken because they involve the use of mechanized equipment. Therefore existing levels of soil erosion and slumping will continue.

### Conclusion

Erosion and slumping would continue at current levels on 23,542 acres of unstable soils. Erosion and slumping may increase if oil and gas were discovered on 11,761 acres of unstable soils.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-6 lists the impacts of Alternative 2 relative to projections for the No Wilderness Alternative.

### Conclusion

The restrictions on logging will result in the loss of 22 potential jobs. However, seven jobs may be sustained in recreation and ranching. All economic activity would sustain $135,572 in annual income to the local economy.

TABLE 4-6

ECONOMIC IMPACTS OF ALTERNATIVE 2

| | Projected Annual Employment 1995[1] | | Projected Annual Income 1995 | |
|---|---|---|---|---|
| Economic Resources | Alternative 2 | No Wilderness Alternative | Alternative 2 | No Wilderness Alternative |
| Timber Harvest | 0 | 22 | 0 | $520,344 |
| Recreation | | | | |
| Snowmobiling | 0 | 8 | 0 | 92,618 |
| Elk Hunting | 3 | 3 | 28,944 | 26,784 |
| Livestock | 4 | 5 | 106,628 | 123,020 |
| Total | 7 | 38 | $135,572 | $762,762 |

[1] Units in person years

# ALTERNATIVE 3, NO WILDERNESS

## Effects on Wilderness Values

The No Wilderness Alternative would recommend no special legislative protection to natural values on 72,885 acres. Wilderness values may be disturbed by oil and gas exploration on 17,685 acres and by timber harvest on 13,200 acres north of the Divide.

In the long term, there would be few adverse impacts to the wilderness values south of the Continental Divide. Timber harvest next to the study area may occur on the Targhee National Forest. Oil and gas development may also occur within the study area.

Off road vehicle use north of the Continental Divide would continue and possibly increase. If this occurs, some of the vehicle trails may be upgraded to the status of roads, thereby further bisecting the study area. Additional casual, primitive vehicle trails would likely develop in the future causing a further loss of wilderness values. The area south of the Continental Divide is closed to motor vehicles except snowmobiles.

Upgraded or new access roads to inholdings within the study area, timber harvest on the 690-acre state section, or phosphate extraction on the 850 acres of the phosphate lease are potential adverse impacts. This is not probable, however, on the state-owned section south of Nemesis Mountain as timber values are low. Development on the phosphate leases is always a possibility although is not anticipated for the forseeable future. If such changes occur, the naturalness, solitude, and scenic values would be temporarily and possibly permanently degraded.

Timber harvest, mineral activity, increased off road vehicle use, increased animal grazing, or other soil disturbing activities in the Red Rock Lakes watershed may decrease the natural integrity of the Red Rock Lakes Wilderness. Such development is likely in the long term.

### Conclusion

Nondesignation of the study area may adversely affect the wilderness values of naturalness, solitude, primitive recreation, scenery and multiple resource benefits, in the long term. Management of Targhee and Beaverhead National Forest lands would generally maintain wilderness characteristics. Approximately 18,000 acres east of Matsingale Creek and north of the Divide would retain its wilderness characteristics although adjacent development might periodically affect this portion as well.

## Effects on Recreation Activities and Use Levels

Logging in the northwestern portion and possible mineral development would adversely affect primitive recreation values. The natural physical setting and scenic beauty, which are essential elements in primitive recreation activities, could be altered by road construction, timber harvest, and other development activities. The likelihood of the Continental Divide Trail passing through developed areas is increased.

North of the Continental Divide, snowmobile travel restrictions for elk winter range protection would remain over most of the western area. Snowmobiles would be restricted to all but approximately 675 acres on the eastern side. Snowmobile use of the Island Park-Red Rock Pass loop route would be permitted. There would be no change other than an increase in snowmobile use over time south of the Continental Divide. Study area wide, 6,350 acres of appropriate terrain would be open to snowmobiles.

Present use levels and the mix of activities would continue for most recreation activities with the exception of hunting. Table 4-7 shows the expected changes in recreation. Logging and road construction in big game habitat would displace elk and result in a reduction in the length and quality of the hunting season in Montana and a loss of 200 hunter visitor days.

TABLE 4-7

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 3

| Recreation Activity | Present Use (RVDs) | Alternative 3 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,480 | -200 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 596 | 0 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

### Conclusion

The No Wilderness Alternative would result in a decrease of 200 recreational visitor days of hunting due to the adverse impact of logging on elk habitat in Montana. The scenic and natural setting which enhances primitive recreation would be slightly affected. The probability that the Continental Divide Trail would pass through developed areas is increased.

## Effects on Wildlife Habitat

Logging and road building could occur on the 13,200 acres of suitable forest land in the northwestern portion. As a result, short-term adverse impacts would occur on elk, fisheries, wolverine, grizzly bear, lynx, accipiters, spruce grouse, and offsite bald eagle and waterfowl habitat.

The primary impact on elk would be the potential loss of cover effectiveness on 13,200 acres of fall and migrational staging habitat and 3,600 acres of winter habitat. The resulting decrease in elk population would likely require short-term (approximately 25 years) restrictions in hunting until the cover regenerated. Summer and calving habitats would be slightly affected. Over the long term, fall cover effectiveness would be reduced due to road construction. This would occur even if the roads are closed to vehicles.

Wolverine, grizzly bear, and lynx would be adversely affected on 13,200 acres by road building which would increase human-related conflicts and decrease hiding cover and isolation. Of the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986) none will be recommended for wilderness. Accipiters and spruce grouse would be adversely affected in the long term (50 to 70 years), due to a loss of nesting habitat in the northwestern portion.

Fisheries, offsite waterfowl including trumpeter swan, and offsite bald eagle habitats would be affected by development activities on 13,200 acres. Impacts on fisheries would be most significant due to short-term impacts of accelerated erosion and sedimentation from logging and road building (Bjornn et al 1977). Some significant increases in peak flow volumes and land slumping resulting from reduced evapotranspiration rates are also possible. These impacts would be short-term (10 years or less) and would retard recovery of cutthroat and grayling populations on about six miles of onsite stream. Approximately 16,974 acres of Red Rock Lakes watershed could be maintained for wildlife values in the long term even if the study area were not designated wilderness.

The offsite habitat of bald eagle would be affected indirectly through a loss of prey species (fish, waterfowl). The impact is not expected to jeopardize the existing population.

Logging activities would increase forage for black bear, mule deer, moose, and blue grouse. Mule deer would benefit only slightly, due to limiting winter habitat. Moose (USDI, FWS 1949) and black bear would benefit moderately, depending upon retention of sufficient old-growth cover.

A program to reintroduce mountain goats would likely occur under this alternative.

### Conclusion

The nonwilderness alternative would result in adverse impacts on elk and species of special interest. Logging would degrade 13,200 acres of fall and migrational staging habitat and 3,600 acres of prime winter habitat for elk. Grizzly bear habitats will be adversely affected on 13,200 acres but maintained on the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986). Offsite and onsite fish and waterfowl habitat would be adversely affected by accelerated erosion and siltation following logging on about 13,200 acres of watershed. Mule deer would benefit slightly, while moose, black bear, and mountain goat would benefit to a moderate degree.

## Effects on Range Resources

Selection of the No Wilderness Alternative would cause little impact on the range resource. Multiple use management would continue as prescribed in the *Dillon Resource Area Management Framework Plan* (USDA, BLM 1979) and in the land management plans for the Beaverhead (USDA, FS 1986b) and Targhee National Forest (USDA, FS 1985b).

On the Targhee National Forest lands, an increase of 275 AUMs may be authorized by the year 2030. Structural and nonstructural range improvements would allow this increase in AUMs.

About 100 AUMs of additional forage created by timber harvest would become available on the public lands. This would be allocated to livestock and wildlife for approximately 25 years after logging.

### Conclusion

A total of 375 additional AUMs over present use would be available for livestock grazing.

## Effects on Timber Resources

Timber harvest in the northwest corner could occur on 13,200 acres. The total volume is 128.5 mmbf with an annual yield of 2.64 mmbf.

### Conclusion

A total of 2.64 mmbf of annual yield would be available for harvest on 13,200 acres north of the Divide.

## Effects on Mineral and Energy Development

Potential development of mineral resources would not be restricted and could occur as outlined in the land management plans. (See Appendix B, C, and D.)

## Effects on Unstable Soils

A total of 22,092 acres of unstable soils may be disturbed by development activity, while 13,211 acres should remain undisturbed.

About 10,400 acres of suitable timber on unstable soils north of the Continental Divide and west of Matsingale Creek would be available for timber harvest. Special precautions would be implemented to reduce the risk of slope failure due to road building and timber harvest, but sediment loss, slumping, and a decrease in water quality may still occur. Additional sediment load would accelerate the filling in of irrigation reservoirs such as Lima Reservoir. However, the use of Best Management Practices should mitigate these adverse impacts.

Existing oil and gas leases would be subject to standard stipulations which would control or exclude development on slopes over 20 percent on extremely erodable or slumping soils. These soil conditions exist on leases north of the divide. Therefore development activity would occur only if adverse impacts on soils could be mitigated. New leases will prohibit surface occupancy.

Of the approximately 15,110 acres of unstable soils that occur south of the Continental Divide, 8,410 acres would remain undisturbed. Of the 6,700 acres remaining where development activity may occur, 2,700 acres are leased for oil and gas and 4,000 acres are under lease application. Oil and gas activity could cause soil erosion and slumping. Development on these lands is not likely at present given lack of industry interest in the area.

This alternative would allow for soil stabilization projects.

### Conclusion

Erosion and slumping may increase on 22,092 acres of unstable soils. About 13,211 acres of unstable soils would be protected by current land management plans and would not be subject to development activities which might increase soil erosion and sedimentation.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-8 lists the impacts for the No Wilderness Alternative.

### Conclusion

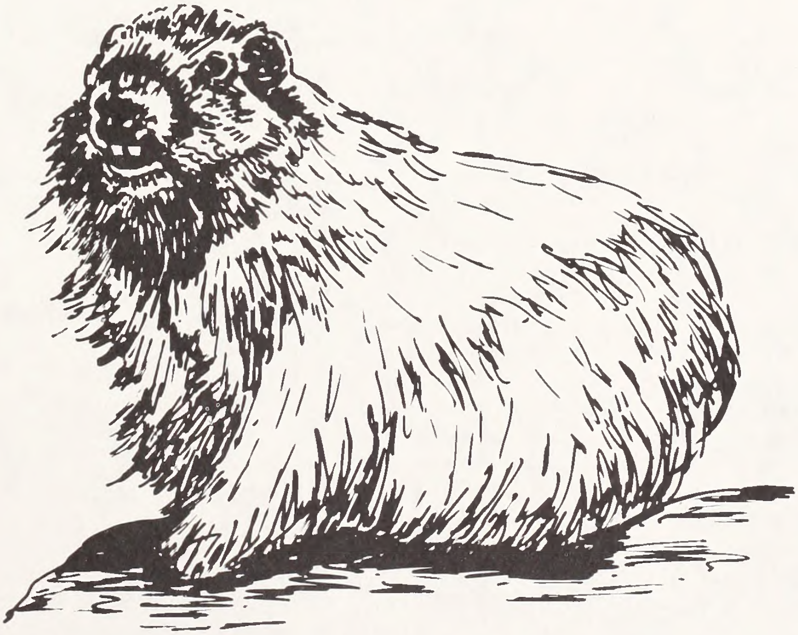
The annual timber harvest could support 22 jobs. In addition, 16 jobs in ranching and recreation would be sustained. All economic activity would sustain $762,762 in annual income to the local economy.

**TABLE 4-8**

**ECONOMIC IMPACTS OF ALTERNATIVE 3**

| Economic Resources | Projected Annual Employment 1995[1]<br>Alternative 3<br>(No Wilderness Alternative) | Projected Annual Income 1995<br>Alternative 3<br>(No Wilderness Alternative) |
|---|---|---|
| Timber Harvest | 22 | $520,344 |
| Recreation | | |
| Snowmobiling | 8 | 92,618 |
| Elk Hunting | 3 | 26,784 |
| Livestock | 5 | 123,020 |
| Total | 38 | $762,762 |

[1]Units in person years



# ALTERNATIVE 4

## Effects on Wilderness Values

Wilderness designation would cover 26,619 acres. A total of 46,266 acres would not be designated wilderness.

This alternative would retain wilderness values and maintain scenic, recreational, and cultural resources on 26,619 acres. This option would supply some visual and water quality protection for Red Rock Lakes Wilderness but 13,000 acres of watershed for the lakes would be open to development.

Several types of development activities adjacent to the study area would disturb wilderness values. Activities on the Sheep Station, the Sawtell radio tower site, state lands, Red Rock Lakes National Wildlife Refuge, and private lands to the north, as well as phosphate, and building stone extraction sites to the south all may infringe on natural values. The narrow width and slopes increase the possibility that human activity, especially to the north, would adversely affect wilderness values. However, at present, such development is not likely to occur. The two internal watershed contouring areas, a convoluted and unspecific south boundary, and maintenance periodically on two spring developments would all be long-term adverse effects on wilderness values on the Targhee National Forest lands.

On lands not recommended for wilderness, timber harvest north of the Divide would alter wilderness characteristics on 13,200 acres. Minerals development on the Tin Cup decorative building stone claim and on the 850 acres of phosphate lease south of the Continental Divide could adversely affect wilderness values on adjacent lands.

### Conclusion

Wilderness values would be retained on 26,619 acres in the eastern half of the study area. Timber harvest on 13,200 acres north of the Divide would adversely affect wilderness qualities on the portion not designated wilderness. In addition 13,000 acres of scenic backdrop for the Red Rock Lakes Wilderness would be open to development activities.

## Effects on Recreation Activities and Use Levels

Wilderness designation would enhance primitive recreation in the eastern portion of the study area and increase the public awareness of the eastern part of the Continental Divide Trail. About 26,619 acres would be closed to motorized vehicles, and one mile of primitive trail already closed seasonally would be permanently closed. Closure to snowmobiles would result in a loss of 240 visitor days of snowmobile use. There would be an unquantifiable loss of potential recreation vehicle access that would have resulted from development activity. Existing levels of use would be maintained, with the exception of the elimination of snowmobile use (see Table 4-9).

Development activities in the lands not recommended for wilderness would result in a loss of primitive recreation values west of Matsingale Creek. A loss of 200 hunter visitor days is expected.

TABLE 4-9

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 4

| Recreation Activity | Present Use (RVDs) | Alternative 4 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,480 | -200 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 356 | -240 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

### Conclusion

Primitive recreation values would be retained on 26,619 acres in the eastern half of the study area. About 240 visitor days of snowmobile use may be lost. Timber harvest on lands not designated wilderness will displace elk and result in the loss of 200 hunter visitor days.

## Effects on Wildlife Habitat

On the portion recommended wilderness, 16,974 acres of wetland drainage would remain undisturbed by development activities.

On the portion not recommended wilderness, about 13,200 acres of fall and migrational staging habitat and 3,600 acres of prime winter habitat for elk would be logged in the long term. The 26,619 acres recommended for wilderness is occasionally visited by the grizzly bear. Of the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986), 15,483 acres will be recommended for wilderness. Offsite and onsite fish and waterfowl habitat would be adversely affected by accelerated erosion and siltation from development activities on unstable soils. Mule deer would benefit slightly while moose, black bear, and mountain goat would benefit to a moderate degree.

### Conclusion

Wildlife would be adversely affected by logging on 13,200 acres. The logging would disturb elk fall and migrational staging habitat. Offsite and onsite fisheries habitat and waterfowl habitat in the Centennial Valley would be adversely affected by increased erosion and siltation resulting from logging operations.

## Effects on Range Resource

Wilderness designation on 26,619 acres would have a minimal effect on livestock grazing. Livestock permittees in the southeast portion would experience increased time or increased costs in construction and maintenance of range improvements and monitoring. However, increases in forage stemming from a more natural role of fire in a wilderness area would allow greater livestock management flexibility.

In the portion not recommended for wilderness, the number of AUMs assigned for livestock grazing may increase by 295 over present use.

### Conclusion

Livestock grazing may increase by 295 AUMs over present use in the portion not designated wilderness.

## Effects on Timber Resources

In the portion recommended wilderness, no suitable timber would be foregone. However, wilderness designation would restrict the agencies ability to control the spread of destructive insects and disease.

A total of 128.5 mmbf of timber would be available for harvest on 13,200 acres of suitable timber north of the Divide if 26,619 acres are designated wilderness. Table 4-10 shows the relative amounts of timber available and foregone in Alternative 4.

**TABLE 4-10**

**TIMBER RESOURCE IN ALTERNATIVE 4**

| | Foregone | Available |
|---|---|---|
| Suitable Timber | 0 acres | 13,200 acres |
| Standing Volume | 0 mmbf | 128.5 mmbf |
| Annual Yield | 0 mmbf | 2.64 mmbf |

### Conclusion

A total of 2.64 mmbf of annual yield timber would be available for harvest on 13,200 acres north of the Divide.

## Effects on Mineral and Energy Development

In the 26,619 acres recommended wilderness, designation would restrict oil and gas exploration and development on 1,166 leased acres in the short term. When the leases expire, oil and gas exploration will be precluded on the entire area recommended for wilderness. About 1,221 acres covered by lease application and 289 acres in a simo tract would not be leased. Additional mitigative measures required of the Tin Cup claimants would cost the operation additional time or money to comply with wilderness restrictions.

There would be no effect on the minerals resource on the nonwilderness portion of the area.

### Conclusion

Wilderness designation of 26,619 acres would restrict oil and gas exploration on 1,166 acres in the short term and preclude any further development on the entire area recommended for wilderness when the leases expire. About 1,221 acres of lease application and 289 acres of simo tracts would not be leased.

## Effects on Unstable Soils

A total of 22,092 acres of unstable soils may be disturbed by development activity, while 13,211 acres would remain undisturbed.

In the portion designated wilderness, 873 acres of unstable soils would remain undisturbed. Existing levels of soil erosion, slumping, and water quality would continue. No soil stabilization projects using motorized equipment would occur. If existing oil and gas leases were developed, 170 acres of unstable soils may be disturbed. Since such development is not likely under present market conditions, potential disturbance is minimal during the life of the lease. Some exploration may occur using explosive charges.

In the portion not designated wilderness, 21,922 acres of unstable soils may be disturbed by oil and gas or logging activity. The affects of road building and logging north of the Divide could significantly affect soil stability, water quality, and silt deposits in irrigation reservoirs such as Lima Reservoir. Impacts would be mitigated by Best Management Practices (see Appendix L). A total of 12,338 acres of unstable soils would remain undisturbed.

### Conclusion

Erosion and slumping would continue at present levels on 13,211 acres of unstable soils. Levels of erosion and slumping may increase on 22,092 acres of unstable soils if development activities occur.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-11 lists the impacts of Alternative 4 relative to the projections for the No Wilderness Alternative.

**TABLE 4-11**

**ECONOMIC IMPACTS OF ALTERNATIVE 4**

| | Projected Annual Employment 1995[1] | | Projected Annual Income 1995 | |
|---|---|---|---|---|
| Economic Resources | Alternative 4 | No Wilderness Alternative | Alternative 4 | No Wilderness Alternative |
| Timber Harvest | 22 | 22 | $520,344 | $520,344 |
| Recreation | | | | |
| Snowmobiling | 5 | 8 | 55,322 | 92,618 |
| Elk Hunting | 3 | 3 | 28,944 | 26,784 |
| Livestock | 5 | 5 | 119,520 | 123,020 |
| Total | 35 | 38 | $724,130 | $762,762 |

[1] Units in person years

### Conclusion

The annual timber harvest could support 22 jobs. In addition, 13 jobs in ranching and recreation would be sustained. All economic activity would sustain $724,130 in annual income to the local economy.

# ALTERNATIVE 5

## Effects on Wilderness Values

Wilderness values would remain undisturbed on 29,264 acres. A total of 43,621 acres would not be designated wilderness.

Wilderness designation would preserve wilderness values and maintain scenic, primitive recreation, and cultural resources. Red Rock Lakes watershed would remain undisturbed because lands to the east of Odell Creek would likely not be developed in the forseeable future and lands to the west would be designated wilderness. Development activities, especially timber harvest around the exterior of the study area would likely reduce wilderness values. Vehicle traffic on two cherry-stemmed roads, maintenance of one spring development, and monitoring of one SCS snow course in winter would likely reduce wilderness values. Off road vehicles entering the area from the south may stray into the wilderness area and disrupt solitude because the wilderness boundaries could not be effectively delineated on the ground.

On lands not recommended wilderness, snowmobile traffic on the Odell Creek haul road would periodically disrupt wilderness values in winter. Mineral development on the Tin Cup decorative building stone claims and on the 950 acres of phosphate lease south of the Continental Divide would adversely affect wilderness values on adjacent lands.

### Conclusion

Wilderness values and scenic, primitive recreation, and cultural resources would remain undisturbed on 29,264 acres designated wilderness.

## Effects on Recreation Activities and Use Levels

Wilderness designation of 29,264 acres would increase the public awareness of the western part of the Continental Divide Trail and increase the probability that it would be constructed. Primitive forms of recreation would be enhanced. About 3,860 acres presently open to motorized vehicles would be closed, and seven miles of primitive trail already partially or totally closed would be permanently closed.

Closure to snowmobiles would result in a loss of 120 recreational visitor days. Table 4-12 shows the expected changes in recreation use levels. There would be an unquantifiable loss of potential recreation vehicle access that would have resulted from development activity. Existing trends of use would be maintained, with the exception of snowmobile use inside the west core area.

There would be no effect on the recreation resource on lands not recommended for wilderness.

TABLE 4-12

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 5

| Recreation Activity | Present Use (RVDs) | Alternative 5 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,680 | 0 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 476 | -120 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

### Conclusion

Motorized vehicle use on 3,860 acres in the northwestern portion of the study area would be prohibited yearlong. About 120 visitor days of snowmobiling would be foregone.

## Effects on Wildlife Habitat

On the portion recommended wilderness, elk fall and migrational staging habitat on the western edge would remain undisturbed by development activities. The 29,264 acres recommended for wilderness is occasionally visited by the grizzly bear. Of the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986), none will be recommended for wilderness.

Mule deer would benefit slightly while moose, black bear, and mountain goat would benefit to a moderate degree. The eastern portion not recommended wilderness would change little.

### Conclusion

Elk fall and migration staging habitat would remain undisturbed by development activity. Other wildlife habitat would be affected only slightly.

## Effects on Range Resources

Wilderness designation of 29,264 acres would have little effect on present livestock grazing. On the 43,621 acres not recommended wilderness there would be a five percent increase in livestock grazing.

In the portion recommended wilderness, an additional 245 AUMs over present use would not be realized. Depending on degree of dependence on motorized vehicles, allotment management would require more time or increased costs in constructing and maintaining range improvements and monitoring. Increases in forage stemming from a more natural role of fire would allow greater livestock management flexibility.

In the portion not recommended wilderness, AUMs will increase by 130 over present use.

### Conclusion

The number of AUMs of livestock grazing will increase by 130 over the present level.

## Effects on Timber Resources

In the portion recommended wilderness, 128.5 mmbf of suitable timber would be foregone. Wilderness designation would restrict the agencies' ability to control forest infestation and disease. In the portion not recommended for wilderness, there would be no effect.

Timber harvest would be foregone on 13,200 acres of suitable timber north of the Divide. Table 4-13 shows the relative amounts of timber available and foregone in Alternative 5.

TABLE 4-13

TIMBER RESOURCE IN ALTERNATIVE 5

| | Foregone | Available |
|---|---|---|
| Suitable Timber | 13,200 acres | 0 acres |
| Standing Volume | 128.5 mmbf | 0 mmbf |
| Annual Yield | 2.64 mmbf | 0 mmbf |

### Conclusion

A total of 2.64 mmbf of annual yield would be foregone on 13,200 acres north of the Divide.

## Effects on Mineral and Energy Development

In the 29,264 acres recommended wilderness, designation would restrict oil and gas exploration and development on 11,068 leased acres in the short term and preclude it on the entire area recommended for wilderness in the long term. About 7,756 acres in oil and gas simo tracts would not be leased. Because the geologic favorability for energy resources is higher to the west of Odell Creek, the impact on mineral and energy resources is higher than in Alternative 4.

There would be no effect on the minerals resources on the nonwilderness portion.

### Conclusion

Oil and gas activity on 11,068 leased acres would be restricted in the short term and precluded on the entire area recommended for wilderness over the long term.

## Effects on Unstable Soils

A total of 11,761 acres of unstable soils may be disturbed by development activity, while 23,542 acres would remain undisturbed.

In the portion designated wilderness, 17,944 acres of unstable soils would remain undisturbed. Existing levels of soil erosion, slumping, and water quality would continue. No soil stabilization projects using motorized equipment would occur. If existing oil and gas leases were developed, 11,161 acres of unstable soils may be disturbed. Since such development is not likely under present market conditions, potential disturbance is minimal during the life of the lease. Some exploration may occur using explosive charges.

In the portion not designated wilderness, 600 acres of unstable soils may be disturbed by oil and gas activity. A total of 5,598 acres of unstable soils would remain undisturbed.

### Conclusion

Erosion and slumping would continue at present levels on 23,542 acres of unstable soils. Levels of erosion and slumping may increase on 11,761 acres of unstable soils if development activities occur.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-14 lists the impacts of Alternative 5 relative to the projections for the No Wilderness Alternative.

### Conclusion

The restrictions on logging will result in 22 potential jobs not being realized. However, 15 jobs in ranching and recreation would be sustained. All economic activity would sustain $223,114 in annual income to the local economy.

TABLE 4-14

ECONOMIC IMPACTS OF ALTERNATIVE 5

| | Projected Annual Employment 1995[1] | | Projected Annual Income 1995 | |
|---|---|---|---|---|
| Economic Resources | Alternative 5 | No Wilderness Alternative | Alternative 5 | No Wilderness Alternative |
| Timber Harvest | 0 | 22 | $0 | $520,344 |
| Recreation | | | | |
| Snowmobiling | 7 | 8 | 73,970 | 92,618 |
| Elk Hunting | 3 | 3 | 28,944 | 26,784 |
| Livestock | 5 | 5 | 120,200 | 123,020 |
| Total | 15 | 38 | $223,114 | $762,762 |

[1] Units in person years.

# ALTERNATIVE 6

## Effects on Wilderness Values

Wilderness values would remain undisturbed on 55,883 acres. A total of 17,002 acres would not be designated wilderness.

On lands recommended for wilderness, wilderness values and scenic, primitive recreation, and cultural resources would remain undisturbed. A large portion of Red Rock Lakes watershed would also remain undisturbed. Midslope boundaries on the south side would likely result in unauthorized off road vehicle use. Periodic disturbance of wilderness values would be associated with two cherry-stemmed roads, four spring developments, and an SCS snow course. The existence of two heavily contoured areas would disrupt naturalness values on approximately 3,000 acres. Development activities offsite may also reduce wilderness values.

On lands not recommended for wilderness, minerals development on the Tin Cup decorative building stone claim, oil and gas leases, and the 850 acres of phosphate lease south of the Continental Divide would adversely affect wilderness values on adjacent lands.

### Conclusion

Wilderness values and scenic, primitive recreation, and cultural resources would remain undisturbed on 55,883 acres.

## Effects on Recreation Activities and Use Levels

On the lands recommended for wilderness, a loss of 360 snowmobiling visitor days compared to the No Wilderness Alternative would result from closure of the area to motorized vehicles. Primitive recreation opportunities would be maintained on 55,883 acres. On the portion not recommended wilderness, there would be no effect on the recreation resource.

Wilderness designation would increase the public awareness of the Continental Divide Trail and increase the probability that it would be constructed.

About 3,860 acres presently open to vehicle use would be closed and seven miles of primitive trail already closed seasonally or year-round would be permanently closed. There would be an unquantifiable loss of potential recreation vehicle access that would have resulted from development activity.

Existing levels of use would be maintained, with the exception of snowmobile use (see Table 4-15). There would be no impact on recreation for lands not recommended wilderness.

### Conclusion

Snowmobile use will decrease by 360 visitor days. Motorized vehicle use in the northwest portion will be prohibited year round.

TABLE 4-15

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 6

| Recreation Activity | Present Use (RVDs) | Alternative 6 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,680 | 0 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 236 | -360 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

## Effects on Wildlife Habitat

On the portion recommended wilderness, 55,883 acres of wildlife habitat would remain undisturbed by development activities including 30,845 acres of drainage into wetland areas. On the 17,002 acres not recommended wilderness, there would be no effect on wildlife as little development is projected.

The 55,883 acres recommended for wilderness is occasionally visited by the grizzly bear. Of the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986), 15,483 acres will be recommended for wilderness.

### Conclusion

Wildlife habitat, especially elk fall and migrational staging habitat, would remain undisturbed by development activity.

## Effects on Range Resources

Livestock grazing will remain at present levels on 55,883 acres. Livestock grazing will increase by four percent on 17,002 acres.

In the portion recommended wilderness, designation would preclude an increase of 275 AUMs over present use. Depending on degree of dependence on motorized vehicles, management of livestock grazing would take more time or incur increased costs in constructing and maintaining range improvements and monitoring. Increases in forage stemming from a more natural role of fire would allow greater livestock management flexibility.

In the portion not recommended wilderness, the number of AUMs will increase by 100.

**Conclusion**

Livestock grazing will increase by 100 AUMs over present use.

## Effects on Timber Resources

In the portion recommended wilderness, the harvest of 128.5 mmbf of timber would be foregone. Wilderness designation would restrict the agencies options for control of forest infestation and disease. In the portion not recommended wilderness, there would be no effect.

Timber harvest would be foregone on 13,200 acres of suitable timber north of the Divide. Table 4-16 shows the relative amounts of timber available and foregone in Alternative 6.

TABLE 4-16

TIMBER RESOURCE IN ALTERNATIVE 6

| | Foregone | Available |
|---|---|---|
| Suitable Timber | 13,200 acres | 0 acres |
| Standing Volume | 128.5 mmbf | 0 mmbf |
| Annual Yield | 2.64 mmbf | 0 mmbf |

**Conclusion**

A total of 2.64 mmbf of annual yield would be foregone on 13,200 acres north of the Divide.

## Effects on Mineral and Energy Development

In the portion recommended wilderness, designation would restrict oil and gas exploration and development on 12,234 leased acres in the short term and preclude it after the leases expire. A total of 1,221 acres covered by lease applications and 8,045 acres included in simo tracts would not be leased. Additional mitigative measures required of the Tin Cup mine claimants would cost the operators additional time or money to comply with wilderness restrictions.

There would be no effect on the minerals resource on the nonwilderness portion of the area.

**Conclusion**

Oil and gas activities will be restricted on 12,234 acres in the short term and precluded on the entire portion recommended for wilderness when the present leases expire.

## Effects on Unstable Soils

A total of 11,761 acres of unstable soils may be disturbed by development activity, while 23,542 acres would remain undisturbed.

In the portion designated wilderness, 18,818 acres of unstable soils would remain undisturbed. Existing levels of soil erosion, slumping, and water quality would continue. No soil stabilization projects using motorized equipment would occur. If existing oil and gas leases were developed, 11,330 acres of unstable soils may be disturbed. Since such development is not likely under present market conditions, potential disturbance is minimal during the life of the lease. Some exploration may occur using explosive charges.

In the portion not designated wilderness, 431 acres of unstable soils may be disturbed by oil and gas activity. A total of 4,724 acres of unstable soils would remain undisturbed.

**Conclusion**

Erosion and slumping would continue at present levels on 23,542 acres of unstable soils. Levels of erosion and slumping may increase on 11,761 acres of unstable soils if development activities occur.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-17 lists the impacts of Alternative 6 relative to the projections for the No Wilderness Alternative.

**Conclusion**

Eleven jobs would be sustained in ranching and recreation. The restrictions on logging will result in 22 potential jobs not being realized. All economic activity would sustain $176,616 in annual income to the local economy.

TABLE 4-17

ECONOMIC IMPACTS OF ALTERNATIVE 6

| | Projected Annual Employment 1995[1] | | Projected Annual Income 1995 | |
|---|---|---|---|---|
| Economic Resources | Alternative 6 | No Wilderness Alternative | Alternative 6 | No Wilderness Alternative |
| Timber Harvest | 0 | 22 | $0 | $520,344 |
| Recreation | | | | |
| Snowmobiling | 3 | 8 | 36,674 | 92,618 |
| Elk Hunting | 3 | 3 | 28,944 | 26,784 |
| Livestock | 5 | 5 | 110,998 | 123,020 |
| Total | 11 | 38 | 176,616 | $762,762 |

[1] Units in person years.

# ALTERNATIVE 7

## Effects on Wilderness Values

Wilderness values would remain undisturbed on 18,067 acres. A total of 54,818 acres would not be designated wilderness.

Wilderness designation of 18,067 acres of public land would preserve wilderness values and maintain scenic, primitive recreation, and cultural resources. The visual and water quality resources of Red Rock Lakes would remain undisturbed. Offsite activities on state and Sheep Station lands, National Wildlife Refuge, and privately owned lands to the north, and phosphate and building stone claims to the south may reduce wilderness values. The narrow width and north face orientation increases the adverse effect of any offsite development to the north. At present such development is not likely.

On lands not recommended wilderness, mineral development on the Tin Cup decorative building stone claim and on the 850 acres of phosphate lease south of the Continental Divide could adversely affect wilderness values on adjacent lands.

### Conclusion

Wilderness values on 18,067 acres, which form the backdrop and watershed for the Red Rock Lakes National Wildlife Refuge, would remain undisturbed.

## Effects on Recreation Activities and Use Levels

On the lands recommended for wilderness, a loss of 161 snowmobiling visitor days would result from closure of the area to motorized vehicles. Primitive recreation opportunities would be enhanced on 18,067 acres. On the portion not recommended wilderness, a loss of 200 hunting visitor days is projected due to timber harvest in elk fall and migrational staging habitat.

Wilderness designation would increase the public awareness of the Continental Divide Trail.

About 18,067 acres would be closed to motorized vehicle and 6 miles of primitive trails presently closed seasonally or year-round to motorized vehicles would be permanently closed. Closure to snowmobiles south of the Divide, would result in a loss of 161 recreational visitor days. There would be an unquantifiable loss of potential recreation vehicle access that would have resulted from development activity. Existing levels of use would be maintained, with the exception of a decrease in big game hunting and the elimination of some snowmobile use north of the Divide. Table 4-18 lists the changes in recreational use.

Development activities in the lands not recommended for wilderness would result in a loss of primitive recreation values west of Tipton Creek. A decrease of 200 hunting visitor days is expected due to displacement of elk by timber harvest in Montana.

### Conclusion

Snowmobile use would decrease by 161 visitor days. Hunting would decrease by 200 visitor days in Montana.

TABLE 4-18

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 7

| Recreation Activity | Present Use (RVDs) | Alternative 7 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,480 | -200 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 435 | -161 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

## Effects on Wildlife Habitat

On the portion recommended wilderness, 18,067 acres of wildlife habitat would remain undisturbed by development activities as well as 1,700 acres of elk fall and migrational staging habitat. A total of 18,067 acres of drainage into wetland areas would also remain undisturbed. On the portion not recommended wilderness, 11,500 acres of elk fall and migrational staging habitat would be logged. Downstream wetlands would be adversely affected by accelerated erosion and siltation caused by development activities on 12,778 acres of watershed.

The elimination of logging on about 1,700 acres of elk fall and migration staging habitat would partially mitigate the effect of development activities on 11,500 acres of similar habitat in the west end. The 18,067 acres recommended for wilderness is occasionally visited by the grizzly bear. Of the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986), none will be recommended for wilderness. Mule deer would benefit slightly while moose and black bear would benefit to a moderate degree. Undisturbed wetlands drainage downstream from the north side of the Continental Divide would be reduced from Alternative 2 by 12,778 acres.

### Conclusion

A total of 1,700 acres of elk fall and migration staging habitat would remain undisturbed while 11,500 acres would be logged.

## Effects on Range Resource

In the portion recommended wilderness, livestock grazing would not be affected. However, in the portion not recommended wilderness, there would be an increase of 325 AUMs over the long term. There would be no significant impact on the use of vehicles because primitive means of transportation are already used for livestock management. Increases in forage stemming from allowing fire to play a more natural role would allow greater livestock management flexibility.

### Conclusion

Livestock grazing would increase by 325 AUMs over present use.

## Effects on Timber Resource

In the portion recommended wilderness, 14.6 mmbf of timber production would be foregone. Wilderness designation would restrict the agencies ability to control forest infestation and disease. In the portion not recommended wilderness, there would be no effect.

Timber harvest would be foregone on 1,500 acres of suitable timber north of the Divide. Table 4-19 shows the relative amounts of timber available and foregone in Alternative 7.

TABLE 4-19

TIMBER RESOURCE IN ALTERNATIVE 7

| | Foregone | Available |
|---|---|---|
| Suitable Timber | 1,500 acres | 11,700 acres |
| Standing Volume | 14.6 mmbf | 113.9 mmbf |
| Annual Yield | 0.3 mmbf | 2.34 mmbf |

### Conclusion

A total of 0.3 mmbf of annual yield would be foregone on 1,500 acres north of the Divide.

## Effects on Mineral and Energy Development

On the portion recommended for wilderness, designation would eliminate opportunities in the long term to explore and develop oil and gas resources on 18,067 acres of low to moderate geologic favorability. There would be no effect on mineral exploration on 54,818 acres.

Oil and gas exploration and development on 3,039 leased acres would be restricted in the short term and precluded when the leases expire. About 1,221 acres covered by lease application and 289 acres in a simo tract would not be leased. The impact of wilderness designation on oil and gas exploration would be less significant east of Odell Creek as the discovery potential is lower.

### Conclusion

Oil and gas activity would be restricted on 3,238 leased acres in the short term and precluded on the entire area recommended for wilderness after the present leases expire.

## Effects on Unstable Soils

A total of 21,583 acres of unstable soils may be disturbed by development activity, while 13,720 acres would remain undisturbed.

In the portion designated wilderness, 5,310 acres of unstable soils would remain undisturbed. Existing levels of soil erosion, slumping, and water quality would continue. No soil stabilization projects using motorized equipment would occur. If existing oil and gas leases were developed, 2,046 acres of unstable soils may be disturbed. Since such development is not likely under present market conditions, potential disturbance is minimal during the life of the lease. Some exploration may occur using explosive charges.

In the portion not designated wilderness, 19,537 acres of unstable soils may be disturbed by oil and gas activity. The affects of road building and logging north of the Divide could significantly affect soil stability, water quality, and silt deposits in irrigation reservoirs such as Lima Reservoir. Impacts would be mitigated by Best Management Practices (see Appendix L). A total of 8,410 acres of unstable soils would remain undisturbed.

### Conclusion

Erosion and slumping would continue at present levels on 13,720 acres of unstable soils. Levels of erosion and slumping may increase on 21,583 acres of unstable soils if development activities occur.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-20 lists the impacts of Alternative 7 relative to the projections for the No Wilderness Alternative.

### Conclusion

The annual timber harvest on lands not recommended could support 20 jobs. Ranching and recreation could sustain 14 jobs. All economic activity would sustain $676,427 in annual income to the local economy.

TABLE 4-20

ECONOMIC IMPACTS OF ALTERNATIVE 7

| | Projected Annual Employment 1995[1] | | Projected Annual Income 1995 | |
|---|---|---|---|---|
| Economic Resources | Alternative 7 | No Wilderness Alternative | Alternative 7 | No Wilderness Alternative |
| Timber Harvest | 20 | 22 | $461,214 | $520,344 |
| Recreation | | | | |
| Snowmobiling | 6 | 8 | 67,599 | 92,618 |
| Elk Hunting | 3 | 3 | 26,784 | 26,784 |
| Livestock | 5 | 5 | 120,830 | 123,020 |
| Total | 34 | 38 | $676,427 | $762,762 |

[1] Units in person years.

# ALTERNATIVE 8

## Effects on Wilderness Values

Wilderness values would remain undisturbed on 42,040 acres. A total of 17,002 acres would not be designated wilderness.

Wilderness designation of 42,040 acres of Targhee National Forest lands would preserve wilderness values and maintain scenic, primitive recreation, and cultural resources on the Idaho side. Preserving the wilderness values over the long term would be difficult because of mid-slope southern boundaries, which would allow inadvertant use by off road vehicles, and four spring and lake developments, three of which would require periodic maintenance. Offsite development on the Sheep Station, Tin Cup and phosphate claims, Sawtell Peak radio facilities, and especially from timber harvest operations on adjacent nonwilderness lands would adversely effect wilderness values. Two watershed improvement projects within the portion recommended wilderness would adversely affect naturalness on 3,000 acres. Phosphate mining activity on a 240-acre plot would adversely affect naturalness on 2,300 acres.

On lands not recommended for wilderness, timber harvest and perhaps minerals exploration would alter wilderness characteristics on 13,200 acres.

### Conclusion

Wilderness values and scenic, primitive recreation, and cultural resources on 42,040 acres of the Targhee National Forest would remain undisturbed by development activity in the long term.

## Effects on Recreation Activities and Use Levels

On the lands recommended for wilderness, a loss of 415 snowmobiling visitor days would result from closing 42,040 acres including the traditional access to the Odell Creek haul road. Primitive recreation opportunities would be enhanced on 42,040 acres. On the portion not recommended wilderness, a loss of 200 hunting visitor days is projected due to timber harvest in elk fall and migrational staging habitat in Montana.

Wilderness designation would increase the public awareness of the Continental Divide Trail. About 42,040 acres would be closed to motorized vehicles. Existing levels of use would be maintained, with the exception of the elimination of most snowmobile use in the area most favored by snowmobilers (see Table 4-21).

Development activities in the lands not recommended for wilderness would result in a loss of primitive recreation values west of Matsingale Creek. A decrease of 200 hunter visitor days is expected due to displacement of elk by timber harvest in Montana.

### Conclusion

Recreation use would decline by 415 snowmobiling visitor days in Idaho and 200 hunter visitor days in Montana.

TABLE 4-21

CHANGES IN RECREATION USE LEVELS UNDER ALTERNATIVE 8

| Recreation Activity | Present Use (RVDs) | Alternative 8 (RVDs) | Change (RVDs) |
|---|---|---|---|
| Hunting | 2,680 | 2,480 | -200 |
| Trail Use | 950 | 950 | 0 |
| Continental Divide Trail | 140 | 140 | 0 |
| Fishing | 425 | 425 | 0 |
| Tent Camping | 885 | 885 | 0 |
| Snowmobiling | 596 | 181 | -415 |
| Cross-Country Skiing | 170 | 170 | 0 |

RVD = Recreation Visitor Day

## Effects on Wildlife Habitat

On the portion recommended wilderness, 42,040 acres of wildlife habitat would be protected from development activities. On the portion not recommended wilderness, 13,200 acres of elk fall and migrational staging habitat would be logged.

The 42,040 acres recommended for wilderness is occasionally visited by the grizzly bear. Of the 25,300 acres managed as Situation 2 in accordance with the *Grizzly Bear Guidelines* (USDI, FWS 1986), all would be recommended for wilderness. Wilderness designation would preclude most habitat improvement projects.

On the lands not recommended wilderness, 16,974 acres of wetland drainage would be protected by existing land plan direction. Some indirect benefits to wildlife species in Montana such as elk and grizzly bear may accrue from wilderness designation of nearby habitat in Idaho. Offsite and onsite fish and waterfowl habitat would be adversely affected by accelerated erosion and siltation due to logging on about 13,871 acres of watershed. Mule deer would benefit slightly north of the Divide while moose and black bear, would benefit to a moderate degree.

### Conclusion

A total of 13,200 acres of elk fall and migration staging habitat would be logged in the northwestern portion in Montana. In addition, 13,871 acres of watershed for the Centennial Valley may be disturbed by development activity and adversely affect offsite and onsite fisheries and waterfowl habitat.

## Effects on Range Resources

Wilderness designation of 42,040 acres south of the Continental Divide would have a moderate effect on livestock grazing management. On the 30,845 acres not recommended wilderness there would be a four percent increase in livestock grazing.

In the portion recommended wilderness, designation would preclude the addition of 275 AUMs. Depending on degree of dependency on motorized vehicles, livestock permittees would require increased time or increased costs in construction and maintenance of range improvements and monitoring. Access to the Sheep Station from the south will be maintained. Increases in forage stemming from a more natural role of fire would allow greater livestock management flexibility.

On the portion not recommended for wilderness, there would be an increase of 100 AUMs in livestock grazing.

**Conclusion**

Livestock grazing would increase by 100 AUMs over present use.

## Effects on Timber Resources

In the portion recommended wilderness, no suitable timber would be foregone. Wilderness designation would restrict the agencies ability to control forest infestations and disease. In the portion not recommended wilderness, there would be no effect from this alternative.

All 128.5 mmbf of timber would be available for harvest on 13,200 acres of suitable timber north of the Divide. Table 4-22 shows the relative amounts of timber available and foregone in Alternative 8.

TABLE 4-22

TIMBER RESOURCE IN ALTERNATIVE 8

| | Foregone | Available |
|---|---|---|
| Suitable Timber | 0 acres | 13,200 acres |
| Standing Volume | 0 mmbf | 128.5 mmbf |
| Annual Yield | 0 mmbf | 2.64 mmbf |

**Conclusion**

A total of 2.64 mmbf of annual yield would be available for harvest on 13,200 acres north of the Divide.

## Effects on Mineral and Energy Development

In the portion recommended wilderness, designation would restrict oil and gas exploration and development on 2,731 leased acres in the short term and preclude it over the long term; 4,900 acres in a simo tract would not be leased. Additional mitigative measures required of the Tin Cup building stone claimants would cost the operators additional time or money to comply with wilderness restrictions.

There would be no effect on the minerals resource on the nonwilderness portion.

**Conclusion**

Oil and gas activity would be restricted on 2,731 leased acres in the short term and precluded on the entire area recommended for wilderness in the long term.

## Effects on Unstable Soils

A total of 18,092 acres of unstable soils may be disturbed by development activity, while 17,211 acres would remain undisturbed.

In the portion designated wilderness, 12,410 acres of unstable soils would remain undisturbed. Existing levels of soil erosion, slumping, and water quality would continue. No soil stabilization projects using motorized equipment would occur. If existing oil and gas leases were developed, 2,700 acres of unstable soils may be disturbed. Since such development is not likely under present market conditions, potential disturbance is minimal during the life of the lease. Some exploration may occur using explosive charges.

In the portion not designated wilderness, 15,392 acres of unstable soils may be disturbed by oil and gas or logging activity. The affects of road building and logging north of the Divide could significantly affect soil stability, water quality, and silt deposits in irrigation reservoirs such as Lima Reservoir. Impacts would be mitigated by Best Management Practices (see Appendix L). A total of 4,801 acres of unstable soils would remain undisturbed.

**Conclusion**

Erosion and slumping would continue at present levels on 17,211 acres of unstable soils. Levels of erosion and slumping may increase on 18,092 acres of unstable soils if development activities occur.

## Effects on Economics

The impact to the local economies was evaluated using the Forest Service IMPLAN Model (USDA, FS 1983). Employment and income changes are projected for the year 1995. Table 4-23 lists the impacts of Alternative 8 relative to the projections for the No Wilderness Alternative.

TABLE 4-23

ECONOMIC IMPACTS OF ALTERNATIVE 8

| | Projected Annual Employment 1995[1] | | Projected Annual Income 1995 | |
|---|---|---|---|---|
| Economic Resources | Alternative 8 | No Wilderness Alternative | Alternative 8 | No Wilderness Alternative |
| Timber Harvest | 22 | 22 | $520,344 | $520,344 |
| Recreation | | | | |
| Snowmobiling | 2 | 8 | 28,127 | 92,618 |
| Elk Hunting | 3 | 3 | 26,784 | 26,784 |
| Livestock | 5 | 5 | 110,998 | 123,020 |
| Total | 32 | 38 | $686,253 | $762,762 |

[1] Units in person years.

### Conclusion

The annual timber harvest could support 22 jobs. In addition, ten jobs in ranching and recreation would be sustained. All economic activity would sustain $686,253 in annual income to the local economy.

## GENERAL IMPACTS

### Social Consequences

The designation of wilderness in the Centennial Mountains would have few significant social consequences. Those alternatives that reduce the amount of timber available for harvest may affect employment levels. However, no alternative discussed in this document would, by itself, cause closure of local mills or create large layoffs. Therefore, the effect on community stability would be small if the entire study area or part of the area were designated as wilderness. Opportunities for employment in the timber industry could be reduced by designation of wilderness. However, normal fluctuations in demand for timber would have a greater impact.

Wilderness designation could affect how the 20 grazing permittees use the Centennial Mountain allotments for livestock grazing. The level of grazing will not decrease under any of the alternatives; however, some changes in management may be necessary. The construction of some range projects and the use of motor vehicles for moving livestock, checking livestock, salting, and maintenance could be restricted. The use of horses and nonmotorized tools may increase . Potential increases in AUMs may be foregone depending on the alternative, thereby decreasing the potential value of the allotment to the permittee.

For most people who use the study area for recreation, there will be little change due to wilderness designation. However, wilderness designation would mean that some routes and areas which snow available. Therefore, snowmobilers would use other areas and increase use levels in those areas. Table 4-24 summarizes the impacts on employment and income to the local area.

**TABLE 4-24**

**SUMMARY OF EMPLOYMENT AND INCOME CONSEQUENCES[1]**

| Alternative | Employment (1995)[2] | Income (1995) |
|---|---|---|
| 1 | -17.8 | -418,397 |
| 2 | -30.8 | -627,190 |
| 4 | -3.5 | -38,632 |
| 5 | -23.6 | -539,648 |
| 6 | -27.6 | -586,146 |
| 7 | -4.5 | -86,335 |
| 8 | -6.3 | -76,509 |

[1] All effects are displayed relative to Alternative 3, the No Wilderness Alternative.

[2] Employment potential; no guarantee that this level of employment will occur. Estimates are for year 1995 and is not cumulative.

### Conclusion

Wilderness designation would have little impact on lifestyles of people living around or visiting the Centennial Mountains.

# CUMULATIVE IMPACTS

The alternatives in this study which propose wilderness north of the Continental Divide adjacent to the Red Rock Lakes Wilderness have a positive cumulative impact on wilderness values. Wilderness in the Centennial Mountains will preserve the natural character of the environment in the Centennial Valley, will add to solitude and primitive recreation values in the Red Rock Lakes Wilderness, and will supply diversity of natural landform, ecosystem, and vegetation. Wilderness in the Centennial Valley floor preserves the visual quality of the foreground and middle ground as seen from the mountains and is important for forage for a variety of wilderness associated fauna which reside in the mountains. The cumulative impact of the addition of the Red Rock Lakes Wilderness and Alternatives 1, 2, 6, or 7 preserves the wilderness values in a large portion of the watershed that feeds the lakes.

The preferred alternative, in conjunction with the existing Red Rock Lake Wilderness, compliment the existing recreational opportunities and wildlife values present in the Yellowstone area through the maintenance of the existing primitive nature of that portion of the Centennial Valley.

# UNAVOIDABLE ADVERSE IMPACTS

## Wilderness

The impacts to the wilderness resource in Alternative 1, 3, 4, 5, 6, 7 and 8 represent to varying degrees unavoidable adverse impacts. If any alternative proposed in this study other than the all wilderness alternative is selected by Congress, the remaining acreage may be subject to timber harvest; livestock, wildlife and watershed improvement projects; energy and mineral development; and motorized vehicle use. All these activities would adversely affect to some degree the study area's naturalness, visual values, and solitude. Some of these management activities would leave their imprint and make portions of the study area unsuitable for future consideration for wilderness designation.

## Soils

The soil types and slopes in the area proposed for timber harvest in Alternatives 1, 3, 4, 7, and 8 will accelerate the loss of soil during logging operations. The degree of loss will also depend on weather conditions and snow melt. Therefore the extent of the loss building and maintenance will also lead to soil loss. However, the use of Best Management Practices should minimize losses (see Appendix L).

Soil erosion and slumping will cause a reduction in water quality and a loss of soil productivity for regeneration of timber stands. The additional silt load will hasten the filling in of the irrigation reservoirs such as Lima Reservoir.

# RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

Wilderness designation would prohibit certain short-term uses such as timber harvest and would foreclose some long-term resource use such as mineral development. The long-term productivity of the soil will be maintained and erosion and slumping would remain at natural levels.

Wilderness designation would maintain long-term resource options. Congress can always reverse wilderness designation if the development of a resource is crucial to the national interest.

# IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

## Wilderness

The physical imprint of some multiple use management activities, such as logging and large scale locatable mineral extraction, would render the affected portion of the study area unsuitable for wilderness designation. Opportunities for primitive and unconfined recreation would be foregone for the forseeable future in portions of the study area altered from a natural environment by development activities.

## Energy and Minerals

The designation of wilderness represents an irretrievable commitment of energy and mineral resources under present wilderness laws. Only Congress can determine if the production commitment would remain irreversible into the future.

## Forestry

Wilderness designation would represent an irretrievable commitment of timber production under the present wilderness laws. Only Congress can determine if the commitment would remain irreversible into the future.

# CHAPTER 5
# CONSULTATION AND COORDINATION

## ISSUE IDENTIFICATION

Issue identification began during the wilderness inventory of the Centennial Mountains Instant Study Area and the adjacent roadless areas on the national forests. Whether or not to include the Sheep Station in the wilderness study became the dominant issue. Between 1980 and 1982, intensive coordination between the federal agencies included organizations and individuals interested in the resolution of this issue. The issue was resolved by Congress in late 1981 when it removed the Sheep Station from jurisdiction of the Bureau of Land Management. In effect, this removed the station from the wilderness study provision of Federal Land Policy and Management Act, and the lands were dropped from further study.

A proposed decision, which was announced in the July 12, 1982 *Federal Register*, recommended 72,886 acres be studied for wilderness designation and 7,194 acres be dropped from further study. The public was asked to comment on the decision. Seventy letters were received. Forty-two favored either wilderness designation or continued wilderness study. Sixteen opposed continued wilderness study or wilderness designation. The rest indicated no preference.

As a result of the public input, an additional 212 acres of the Targhee National Forest, which did not meet wilderness criteria, were dropped from further study. This final decision was announced in the *Federal Register* on January 14, 1985. A 30-day protest period was provided. No protests were received and the decision to include 72,674 acres in the study area became final on January 15, 1985.

The January 14, 1985 *Federal Register* notice also announced the intent of the BLM and Forest Service to complete a joint environmental impact statement. The environmental impact statement would evaluate the impacts of wilderness designation and other alternatives on the study area.

The scoping process for the environmental impact statement began in February 1985. An issues mailing was sent to 375 individuals and organizations. The mailing outlined a tentative set of issues and requested comments. Ninety-two responses were returned. The comment analysis can be found in Appendix A.

Several meetings with public groups took place as the environmental impact statement was being written. Table 5-1 lists the meetings.

## CONSISTENCY WITH OTHER GOVERNMENT AGENCIES

### State of Montana

A recently signed memorandum of understanding between the BLM, the FS, and the Governor of Montana created the Natural Resources Council, which will serve as a clearinghouse for consultation on all natural resource issues. The specific recommendations resulting from this study are evaluated for consistency by this group. State agencies were requested in December, 1981, to provide copies of relevant state level plans that the BLM should consider in this and other planning efforts. No state level plans were provided that are applicable to the counties within the study area.

*The Beaverhead County Comprehensive Plan* (Beaverhead County Planning Board 1976), which was prepared in 1976 and adopted in 1977, specifically mentions a policy to discourage all wilderness areas in Beaverhead County. This policy is in conflict with the directives of FLPMA and the BLM wilderness program policy. Under FLPMA, wilderness preservation is part of the BLM's multiple use mandate, and wilderness values are recognized as part of the spectrum of resource values and uses to be considered in the planning process. A blanket policy discouraging all wilderness preservation is not consistent with this mandate.

The basis of the Beaverhead County policy is the effect of wilderness on the local economy—primarily the livestock, timber, and minerals sectors. Other related goals and objectives are to diversify the local economy; to provide diversified, quality recreation; to increase recreation-related tourism; and to protect key fish and wildlife habitats as they contribute to the economy and livelihood of local outfitters.

The Beaverhead plan says on page 117 that growth in the recreation sector must be integrated with, and not detrimental to, the production of livestock, timber, and minerals. In addition, the action plan calls for an exchange of

### TABLE 5-1

### PUBLIC INFORMATION MEETINGS TO DISCUSS THE ISSUES ADDRESSED IN AND STATUS OF THE CENTENNIAL MOUNTAINS WILDERNESS EIS

| Date | Organization | Number of Individuals Involved |
|---|---|---|
| February 1985 | Louisiana Pacific | 1 |
| March 1985 | KIDK Idaho Falls TV Interview | broadcast audience |
| May 1985 | Pintlar Audubon Society | 15 |
| August 1985 | Greater Yellowstone Coalition | 45 |
| September 1985 | Beaverhead County Commission | 3 |
| September 1985 | Montana Department of State Lands | 2 |
| September 1985 | Stoltz Lumber Company | 2 |
| September 1985 | Butte District Advisory Council | 7 |
| August 1985 | Idaho Environmental Council | 1 |
| September 1985 | Sierra Club | 1 |
| October 1985 | Dillon Chamber of Commerce | 17 |
| October 1985 | KDBM-Dillon radio interview | broadcast audience |
| November 1985 | Montana Wilderness Assoc. | 5 |
| December 1985 | Beaverhead Planning Board | 20 |
| December 1985 | Montana Snowmobile Association | 2 |
| December 1985 | Fugowee's Snowmobile Club | 1 |
| December 1985 | Island Park Sportsmen's Association | 1 |
| December 1985 | Idaho Forest Industries | 1 |
| December 1985 | Fremont County Recreation Board | 1 |
| December 1985 | Louisiana Pacific | 1 |
| December 1985 | Fremont County Commissioners | 3 |
| January 1986 | Clark County Commissioners | 3 |
| March 1986 | Idaho Dept. of Fish and Game, and Wyoming Dept of Game and Fish | 30 |
| May 1986 | Bill Cunningham | 1 |

information on future land uses between the county planning board, larger private companies, and state and federal agencies. This latter provision is consistent with FLPMA directives and the current wilderness study.

Although it is apparent that the BLM cannot completely resolve the inconsistency between Beaverhead County's plan and the agency's legal mandate and program policy, the study has incorporated an analysis of economic effects of wilderness designation and nondesignation. Local economic concerns were considered as a major factor in deriving recommendations from this analysis.

# AGENCIES AND ORGANIZATIONS CONSULTED

## Federal Agencies

Department of Agriculture
  Forest Service
  Sheep Experiment Station
  Soil Conservation Service
Department of Air Force
Department of Interior
  Bureau of Mines
  Fish and Wildlife Service
  National Park Service

## State Agencies

Idaho Department of Fish and Game
Montana Bureau of Mines
Montana Department of Agriculture
Montana Department of Fish, Wildlife and Parks
Montana Department of Health and Environmental Sciences
Montana Department of State Lands
Montana State Historical Preservation Office
Montana State University
Office of the Governor—Idaho
Office of the Governor—Montana
University of Montana
Wyoming Department of Game and Fish

## Local Agencies

Beaverhead County Commissioners
Beaverhead County Planning Board
Clark County Commissioners
Fremont County Commissioners
Fremont County Recreation Board

## Organizations and Businesses

American Wilderness Alliance
Atlantic Richfield Company
Beaverhead Chamber of Commerce
Beaverhead Forest Concerned Citizens
Butte District Advisory Council

Butte Mineral and Gem Club
Conoco
Consolidated Georex Geophysics
Continental Divide Trail Society
Defenders of Wildlife
Dillon Chamber of Commerce
F.H. Stoltz Land and Lumber Company
Fugowee's Snowmobile Club
Golden Sunlight Mine
Greater Yellowstone Coalition
Idaho Environmental Council
Idaho Forest Industries
International Forest Resource Council
International Snowmobile Industry Association
Island Park Sportsmen Association
J.R. Simplot Company
Louisiana—Pacific Corporation
Montana Audubon Council
Montana Snowmobile Association
Montana Wilderness Association
Montana Wildlife Fund
Montana Woolgrowers Association
National Wildlife Refuge Association
Noranda Exploration Inc.
Pintlar Audubon Society
Sierra Club
Skyline Sportsmen's Association, Inc.
Stoltz Lumber Company
Trumpeter Swan Society

# DISTRIBUTION

The draft environmental impact statement will be distributed to all the agencies and organizations listed previously. In addition, copies will be sent to all individuals who responded to the issues mailing, the media, and local libraries. The following agencies and organizations will also receive copies of the draft.

## Federal Agencies

Advisory Council on Historic Preservation
Army Corps of Engineers
Department of Energy
Department of Housing and Urban Development
Department of Interior
  Bureau of Reclamation
  Geological Survey
  Mineral Management Service
Environmental Protection Agency
Federal Regulatory Commission
Nuclear Regulatory Commission

## Native American Tribes

Shoshone—Bannock Tribe

## Congressional

U.S. Senator Max Baucus
U.S. Senator Jake Garn
U.S. Senator James McClure
U.S. Senator John Melcher
U.S. Senator Steven Symms
U.S. Representative Larry Craig
U.S. Representative Ron Marlenee
U.S. Representative Richard Stallings
U.S. Representative Pat Williams

## State Agencies

Montana State Intergovernmental Review
Harriman State Park
Idaho Department of Health and Welfare
Idaho Department of Lands
Idaho Department of Parks and Recreation
Idaho Department of Tourism and Industrial Development
Idaho Department of Water Resources
Idaho State Clearinghouse
Idaho State Historical Society
Montana Department of Livestock
Montana Department of Natural Resources and Conservation
Montana Environmental Quality Council
Northwest University
Oregon State University
University of Idaho
University of Oregon
University of Wisconsin
Western Montana College

## Local Agencies

Madison County Extension Agent
Hot Springs Planning Board

## Organizations and Businesses

AEC Sportsmen's Club
Alberta Wilderness Association
American Motorcyclist Association
Big Buck Sportsmen's Club
Big Sky Land and Leasing
Butte District Grazing Advisory Board
C and B Timber
Chevron, USA INC
Conservation Endowment
Hamilton Brothers Oil Company
Idaho Alpine Club
Idaho Conservation League
Idaho Natural Areas Coordination Committee
Idaho Natural Resources Legal Foundation
Idaho Outfitters and Guide Board
Idaho Stud Mill
Idaho Trail Machine Association
Idaho Wildlife
Institute for Ecological Studies
Kerr McGee Corporation
Montana Environmental Information Center
Montana Cattlemen's Association
Montana Land and Mineral Owners Association
Montana Petroleum Association
Montana Power Company
Montana Water Development Association
Montana Wildlife Federation
National Wildlife Federation
Nature Conservancy
North Fork Club
Outdoor Resource Center, Inc.
Sohio Petroleum Company

Texaco, Inc.
Union Carbide Corporation
West Yellowstone Snowmobile Club
Western Environmental Trade Association
Western Forest Industry
Wilderness Institute U of M
Wilderness Society
Wildland Research Institute
Wildlife—Wildland Institute

# LIST OF PREPARERS

The Butte District of the Bureau of Land Management, Department of the Interior is the lead agency in the preparation of the Centennial Mountains Wilderness EIS. The Targhee National Forest and the Beaverhead National Forest of the Department of Agriculture are cooperating agencies.

## Project Management

Philip A. Gezon served as the project manager for the BLM. His qualifications include experience as an interdisciplinary team member for the Garnet RMP/EIS, technical coordinator for the Missouri Breaks Wilderness Suitability Report EIS and the Bitter Creek Wilderness EIS. He is an Outdoor Recreation Planner (7 years) with the BLM. He has a BA in History from Kenyon College and a MS in Outdoor Recreation Management from the University of Oregon.

Paul R. Oakes served as the project manager for the Targhee National Forest. His qualifications include experience on several EISs including the Targhee National Forest Plan, the West Slope Tetons and Island Park Unit Plans, the Targhee Geothermal Leasing Plan, and RARE II. He is an Assistant Forest Planner with the Forest Service (five years) and was a Soil Scientist (nine years). He has a BA in Biological Science from Boise State University.

Sherry L. Milburn served as the project manager for the Beaverhead National Forest. Her qualifications include experience as co-author of the 1985 Revised Draft EIS and Proposed Forest Plan and the 1986 Final EIS and Forest Plan for the Beaverhead National Forest. She also served as technical assistant to the planning team for the 1978 Beaverhead EIS and Forest Plan. She is presently Public Affairs Specialist for the Beaverhead National Forest. She has a BS in Biological Science and an MS in Counseling from Eastern Montana College.

Carole Mackin served as technical coordinator. Her qualifications include experience on several EISs including the Garnet and Headwaters Resource Management Plans and the Dillon and Headwaters Wilderness Planning Amendments. She is a Writer-Editor for the BLM (one year) and was an Environmental Specialist (two years). She has a BS in Zoology from Northeast Missouri State University.

## Interdisciplinary Team

### Recreation Resources

Bruce Botsford served as the team specialist for recreation on public lands. His qualifications include experience as a project manager on the Dillon Wilderness Planning Amendment/EIS. He is an Outdoor Recreation Planner with the BLM (10 years) and has worked for the Heritage Conservation and Recreation Service (10 years). He has a BS in Conservation from Wisconsin State University.

Tim Kimble served as the team specialist for recreation on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member on the Targhee and Sierra Land Management Plans/EIS. He is a Recreation, Lands and Minerals Assistant with the Forest Service (eight years) and was a forester with the Wisconsin Department of Natural Resources (one year). He has a BS in Forest Management Science from Colorado State University.

### Forestry Resources

William D. Torgersen served as the team specialist for forestry resources on public lands. His qualifications include experience as an interdisciplinary team member on the Foothills Grazing EIS, Headwaters RMP/EIS, and the Dillon Wilderness Planning Amendment/EIS. He is a forester with the BLM (23 years). He has a BS in Forest Resource Management from the University of Minnesota.

Bruce Padian served as the team specialist for forestry resources on the Targhee National Forest lands. He is a Timber Management Assistant with the Forest Service (ten years). He has a BS in Forest and Watershed Management from Utah State University.

Kevin R. Schulkoski served as the team specialist for forestry resources on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member on the Payette National Forest Land Management Plan/EIS. He is a Supervisory Forester with the Forest Service (eight years). He has a BS in Forest Management from the University of Montana.

### Watershed Resources

David A. Lomas served as the team specialist for watershed resources for the public lands. His qualifications include experience as an interdisciplinary team member on the Headwaters RMP/EIS and the Mountain Foothills EIS. He is a Hydrologist with the BLM (eight years). He has a BS in Forestry from Michigan Technological University and a MS in Watershed Science from Utah State University.

George Matejko served as the team specialist for watershed, range, and wildlife resources on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member on the Targhee National Forest Plan/EIS. He is a Resource Assistant with the Forest Service (eight years) and was a Hydrologist with the BLM (two years). He has a BS in Forest Management.

### Wildlife Resources

Lewis H. Myers served as the team specialist for wildlife resources on the public lands. His qualifications include experience as an interdisciplinary team member on the Mountain Foothills EIS and Colstrip EIS. He is a Wildlife Biologist with the BLM (21 years). He has a BS in Game Management from Humbolt State College and a MS in Zoology from the University of Nevada.

Dick Welch served as the team specialist for wildlife resources on the Targhee National Forest lands. He is a

Wildlife Biologist with the Forest Service (24 years). He has a BS in Wildlife Management from the University of Montana.

Mark Orme served as the team specialist for wildlife resources on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member on the Targhee National Forest Plan/EIS. He is a Wildlife Biologist with the Forest Service (eight years). He has a BS in Forestry and MS in Wildlife Management from the University of Idaho.

Mary Beth Maj served as the team specialist for wildlife resources on the Targhee National Forest lands. She is a Wildlife Biologist with the Forest Service (four years). She has a BS and MS in Wildlife Management from Montana State University.

### Range Resources

L.I. Hagener served as the team specialist for range resources on the public lands. His qualifications include experience as an interdisciplinary team member on the Mountain Foothills EIS. He is a Range Conservationist with the BLM (seven years). He has a BS in Range Science from Montana State University.

Keith R. Tweedie served as the team specialist for range resources on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member on the Targhee National Forest Land Plan/EIS. He is a Supervisory Range Conservationist with the Forest Service (21 years). He has a BS in Range Management from Utah State University.

Howard Lyman served as the team specialist for range resources on the Targhee National Forest lands. He is a Range Conservationist with the Forest Service (nine years). He has a BS in Range Management from Humbolt State University.

### Cultural Resources

Lawrence A. Kingsbury served as the team specialist for cultural resources on the public lands. His qualifications include experience as an interdisciplinary team member on the Challis Grazing EIS, Little Lost Birch Creek Planning Unit EIS, and the Mountain Foothills EIS. He is an Archaeologist with the BLM (two years) and was a Research Archaeologist with the University of North Dakota (one year). He has a BS from Genesco State University and a MA from Idaho State University in Anthropology/Archaeology.

James A. McDonald served as a team specialist for cultural resources on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member on the Targhee National Forest Land Management Plan/EIS. He is a Forest Archaeologist with the Forest Service (eight years) and was an Archaeologist with the National Park Service (three years). He has a BA in Archaeology from Yale University and a MA in Archaeological Resource Management from the University of Arizona.

### Mineral Resources

R. David Williams served as the team specialist for mineral resources on the public lands. His qualifications include experience as an interdisciplinary team member on the Dillon Wilderness Plan Amendment/EIS and the Headwaters RMP/EIS. He is a Geologist with the BLM (eight years) and has worked in private industry (three years). He has a BS in Geology from Bates College and a MS in Metamorphic and Igneous Petrology from the University of Montana.

John F. Pruess served as the team specialist for mineral resources on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member for the Targhee National Forest Plan EIS. He is a Forester, Minerals with the Forest Service (20 years). He has a BA from Gettysburg College and an MF in Forestry from Duke University.

### Social and Economic Conditions

David K. Nelson served as the team specialist for economic and social analysis. His qualifications include experience as an interdisciplinary team member on the Garnet RMP/EIS and Headwaters RMP/EIS. He is an Economist (five years) and Planner (one year) with the BLM. He has a BS in Economics and a MS in Agricultural Economics from Montana State University.

John Ferebauer served as the team specialist for economic and social analysis. His qualifications include experience as an interdisciplinary team member on the Caribou and Targhee National Forest Plan/EISs and the Targhee Geothermal Leasing EIS. He is a Shared Services Economist with the Forest Service (eight years) and has been an Economist with the Idaho Department of Water Resources (five years). He has a BS in Agricultural Economics from the University of Idaho.

### Soil Resources

William C. Fanning served as the team member for soil resources on the public lands. His qualifications include experience as an interdisciplinary team member on the Mountain Foothills EIS, Headwaters RMP/EIS, and Headwaters Wilderness Planning Amendment/EIS. He is a Soil Scientist for the BLM (nine years). He has a BS in Soil Science from California Polytechnic State University.

Ken Radek served as the team member for soil resources on the Targhee National Forest lands. His qualifications include experience as an interdisciplinary team member on the Targhee and Tongass National Forest Plans/EISs. He is a Soil Scientist with the Forest Service (nine years) and was with the Soil Conservation Service (three years). He has a BS in Resource Management from the University of Wisconsin.

## DOCUMENT PRODUCTION TEAM

The Centennial Mountains Wilderness EIS was produced by the Butte District and Montana State Office. Table 5-2 lists the production team members and their functions.

TABLE 5-2
DOCUMENT PRODUCTION TEAM

| FUNCTION | NAME | OFFICE |
|---|---|---|
| Editor/Illustrator | Carole Mackin | BLM-Butte |
| Environmental Coordinator | Dan Lechefsky | BLM-Butte |
| Public Participation Coordinator | Ann Matejko | FS-Targhee |
| Production Manager/ Cartographer | Mark Koski | BLM-Butte |
| Word Processor | Delores Vavas | BLM-Butte |
| Cartographic Tech. | Shelley McGlothlin | BLM-Billings |
| Offset Photographer | James Chapman | BLM-Billings |
| Printing Specialist | Rick Kirkness | BLM-Billings |
| Typesetter | Pam Dandrea | BLM-Billings |

# APPENDIXES

# APPENDIX A
# PUBLIC COMMENT

In February 1985 the Forest Service and BLM released an information and issues brochure announcing the start of the Centennial Wilderness Study/EIS, outlining the planning process including opportunities for public involvement, listing a number of preliminary issues that would guide the study, requesting public comment on those and other issues, and updating the mailing list. Figure A lists the issues as they appeared in the brochure.

Figure A-1

## THE IDENTIFICATION OF ISSUES

Proper issue identification is vital to the planning process. Solutions arrived at through planning mean little if they are solutions to the wrong or nonexistent problems.

The section that follows outlines a set of tentative issues we have assembled based on current management policy, communications with the public and the ideas of our own resource specialists. We need to know if you agree with us. The issues are not listed in any particular order of importance.

We are asking you to use the enclosed response form and tell us if they are the issues most important to you, and also if there are any we failed to mention.

### ISSUE: Minerals and Energy

Commercial deposits of phosphate and building stone occur in the area. Oil and gas potential is thought to be moderate to low. Wilderness designation can either restrict or allow future phosphate development and oil and gas exploration and development.

> How can agencies manage the wilderness resource in proximity to valid existing minerals rights?

### ISSUE: Range

Most of the area is currently grazed by livestock. While wilderness designation may restrict range improvements and increases in AUMs, it will not eliminate grazing use. Nonwilderness management affords opportunities for potential increases in grazing use.

> What kind of range improvements are acceptable in a wilderness?

### ISSUE: Snowmobile Use

The mix of current recreation uses and opportunities is diverse and includes hunting, snowmobiling, hiking, horse use, and camping. Some publics would like more emphasis on ORV-type activities, especially snowmobiling, while others would prefer nonmotorized recreational activity. Wilderness designation will preclude opportunities for snowmobile recreation.

> Should snowmobiles be permitted access to the area if it becomes wilderness?
>
> Should other recreational activities have priority over snowmobile use in this area?

### ISSUE: Timber

The study area supports commercial timber stands that could be made available to local mills. Potential timber values and the opportunity to renew stands will be foregone if the area is designated wilderness.

> How important is the timber in this area to local economies?
>
> Should forest insects (Mountain Pine Beetle especially) be controlled in the Centennial Mountains?

### ISSUE: Elk

Habitat in the study area supports numerous wildlife species. Principal among these is elk. Threatened and endangered species are occasional visitors to the area. Wilderness designation precludes wildlife habitat improvement but at the same time preserves existing values and prevents potential habitat degradation sometimes associated with the use and development of other resources.

> How important is wildlife habitat improvement in the Centennial Mountains?

### ISSUE: Grizzly Bear

A part of the area is classified as Situation 2 Gizzly Bear habitat, that is, habitat which is occasionally occupied by bears and in which habitat maintenance and improvement is not the primary management consideration. Wilderness designation precludes Grizzly habitat improvement, but at the same time, preserves existing values and prevents potential habitat degradation sometimes associated with the use and development of other resources.

Have Grizzly Bears or signs of Grizzly Bear been seen in the Centennial Mountains?

> What emphasis should be placed on the protection or enhancement of Grizzly Bear habitat in the area?

## ISSUE: Watershed

An important consideration is the widespread unstable soils. Development activity can result in increased soil movement. Wilderness designation can preclude development activity on unstable soils.

How important is the watershed at the upper elevations to the Red Rock Lakes Wildlife Refuge?

## ISSUE: Wilderness

All or portions of the study area should be classified as wilderness in order to most effectively protect or enhance wilderness characteristics over the long term. Agency wilderness inventories and the public have identified the Centennial Mountains as having the following wilderness values:

Naturalness
Solitude
Primitive Recreation Opportunities

Development activities would alter or degrade these values.

Should portions of the whole Centennial Mountains be designated wilderness? If so what portions should be recommended to Congress for wilderness designation?

How should the area be managed if it is not designated wilderness?

## ISSUE: Economics

Local economies are currently dependent upon timber, grazing, and recreation. Phosphate may contribute significantly to the future economy of the area. Some economic values such as timber and phosphate mining will be foregone with wilderness designation.

How important are the extractable resources in the Centennial Mountains to the local economies?

What positive impacts to the local economies might be realized with wilderness designation? To what degree would they offset other loss of income?

## ISSUE: Boundaries

Where agencies locate boundaries may or may not facilitate management (i.e., law enforcement, road closures, sale layout, etc.).

Where should boundaries be drawn for any portions of the area that appear to be suitable for wilderness designation?

What boundaries would least interfere with ongoing resource uses?

# RESPONDENT DATA

Table A-1 summarizes the affiliation and geographic locale of the respondents.

Private citizens contributed about half of the 92 response comments, environmental groups mailed in 22 percent, governmental agency comments made up almost 15 percent, and the rest were sent by activity groups, industry and ranchers.

Over half of the comments came from Montana; 18 percent were from Idaho; and the rest were from outside the Montana, Idaho region.

# IDENTIFIED ISSUES

Issues raised by the public may be separated into eighteen categories. The categories that received the most comments were watershed (47 comments), wilderness (42 comments), timber (63 comments), boundaries (44 comments), snowmobiles (29 comments), and minerals (35 comments).

Table A-2 details public response to the issues.

## TABLE A-1
## SUMMARY OF RESPONSES RECEIVED ON ISSUES BROCHURE

| Type of Affiliation | # | Montana Respondents | Idaho Respondents | Out-of-State Respondents |
|---|---|---|---|---|
| Private Citizen | 47 | 22 | 9 | 16 |
| Environmental Group | 20 | 12 | 4 | 4 |
| Governmental Group | 14 | 9 | 3 | 2 |
| Industry | 6 | 3 | 0 | 3 |
| Rancher | 3 | 3 | 0 | 0 |
| Activity Group | 2 | 0 | 1 | 1 |
| Total | 92 | 49 | 17 | 26 |

## TABLE A-2
## ISSUES LISTED BY RESPONDENTS TO ISSUES BROCHURE

| Category | Issue |
|---|---|
| Boundaries | Sheep Station.<br>Boundary recommendation.<br>Red Rock Lakes. |
| Timber | Below cost timber sales.<br>Insects.<br>Fire.<br>Timber value.<br>Timber harvest.<br>Road construction for timber sales.<br>Regeneration of Douglas-fir.<br>Old growth timber. |
| Elk | Effect of designation on elk.<br>Maintenance of elk habitat.<br>Elk hunting. |
| Moose | Effect of designation on moose. |
| Grizzly Bear | Habitat improvement.<br>Grizzly bear as feared predator.<br>Effect of designation on grizzly bear.<br>Hunting grizzly bear. |
| Wolf | Effect of designation on wolf habitat.<br>Reintroduction of wolf. |
| Snowmobiles | Snowmobile use.<br>Snowmobile closure. |
| Watershed | Relationship to Red Rock Lakes NWR water quality.<br>Economic value of watershed for the entire region.<br>Prevention of erosion.<br>Eutrophication of Red Rock Lakes from siltation.<br>Water quality. |
| Economics | Effect of wilderness on local economies.<br>Subsidies for mining, timber and sheep grazing interests.<br>Cost of development vs cost of preservation.<br>Local demand for commodity in relationship to current supply.<br>Regional and national economic effects. |
| Greater Yellowstone Ecosystem | Centennial Mtns. related to Greater Yellowstone Ecosystem. |
| Minerals | Available minerals.<br>Buy out of existing mineral rights.<br>Elimination or restriction of mining.<br>Mining impacts.<br>Quality of phosphate compared to other deposits in region.<br>Potential for rehabilitation of mining area.<br>Oil and gas potential. |
| Range | Effect of designation on grazing.<br>Overgrazing on the Sheep Station.<br>Conflict of grazing and wilderness management.<br>Elimination or restriction of grazing.<br>Range improvements. |
| Wilderness | Management of land under wilderness designation.<br>Expansion of study area.<br>Wilderness quality of the study area.<br>Wilderness demand. |
| Peregrine Falcon | Effect of designation on peregrine falcon. |
| Wildlife in General | Importance of study area to wildlife.<br>Importance of study area to trumpeter swan.<br>Fisheries.<br>Migration patterns.<br>Waterfowl. |
| Off-road Vehicles | Restrict ORV.<br>Open area to ORV. |
| Cultural Resources | Identification of cultural resources. |
| Recreation/ Tourism | Importance of study area to tourism.<br>Continental Divide Trail. |

# COMMENT ANALYSIS

## Timber

Sixty-three comments addressed the timber issue. Many comments opposed timber harvest in the Centennials while some favored it. There was a concern about the pine beetle infestation, with some comments saying that logging would be an effective control method and others saying it would not be. Several commenters believed the timber was not of commercial grade and that it was more valuable if left standing.

## Watershed

Over half of all the comments received mentioned the importance of the watershed in the Centennial Study Area. Comments with vastly different viewpoints on other issues seemed to agree on this issue. The highly erodible soils of the Centennials are recognized as a problem to many downstream resources.

The predominant views were that erosion should be controlled. However, some felt that wilderness designation would prohibit needed control projects, while many said wilderness designation would give the best protection for the watershed.

## Wilderness

Forty-two comments addressed the wilderness issue. Many comments favored wilderness designation for the Centennial Study Area while some opposed it. Many of those who favored wilderness mentioned the relationship of the Centennials to the Red Rock Lakes Wildlife Refuge and the Greater Yellowstone Ecosystem. Many also mentioned the Sheep Station as an integral part of the Centennial ecosystem.

## Economics

Economics was a major concern of many comment letters, both those that opposed and favored wilderness. Many comments asked that all the resources be evaluated as to the present demand and the available supply to meet that demand. Several comments mentioned the economic loss associated with restricting timber harvest. Several comments asked for cost comparison studies to look at the costs of developing resources as compared to the returns to the public. There was a concern that impacts to state and national economies be evaluated as well as local impacts.

## Wildlife

Threatened and endangered species such as grizzly bears, peregrine falcons, and wolves were mentioned in many comment letters. A few letters opposed efforts to improve grizzly habitat. Some letters felt wilderness designation would adequately protect grizzly habitat.

Other wildlife such as elk, moose, fish, and waterfowl were mentioned by many comment letters. The comments generally expressed the importance of the Centennials as wildlife habitat.

## Minerals and Energy

Thirty-five comments addressed the mineral and energy issue. Many comments opposed mineral and energy development in the Centennials while some favored it. Several comments felt the phosphate deposit should be mined while several questioned the value of the phosphate deposits given transportation problems associated with the sites. There was a concern about adverse impacts of past mining activity and suggestions that the sites be reclaimed to control continuing problems.

## Range

Thirty-one comments addressed the grazing issue. Many comments opposed livestock grazing while some favored it. There was a general concern about how wilderness designation would impact grazing. Several comments said the Experimental Station was overgrazed and adversely affected adjacent areas.

## Recreation

Thirty-three comments addressed the recreation issue. Many comments opposed allowing snowmobile use in the Centennials while some favored it. Many of those who favored snowmobiles thought they should be restricted to identified areas. Those opposed felt that snowmobiles were not compatible with wilderness.

Many comments listed hunting and fishing as the most important recreational activities in the Centennials. Scenic values and cultural resources were mentioned as important aspects of the Centennials.

The Continental Divide Trail was noted as an important recreational asset for the Centennials. There was a concern that developed sites were needed for user information, sanitary control, and user safety.

## Access

Access for all types of activities from recreation to timber harvest was a concern stated in several comment letters. Many mentioned that the study area was not easy to enter from the Montana side and wondered if better access could be provided. On the Idaho side, several letters mentioned road closures and restricting road development in the study area.

## Fire

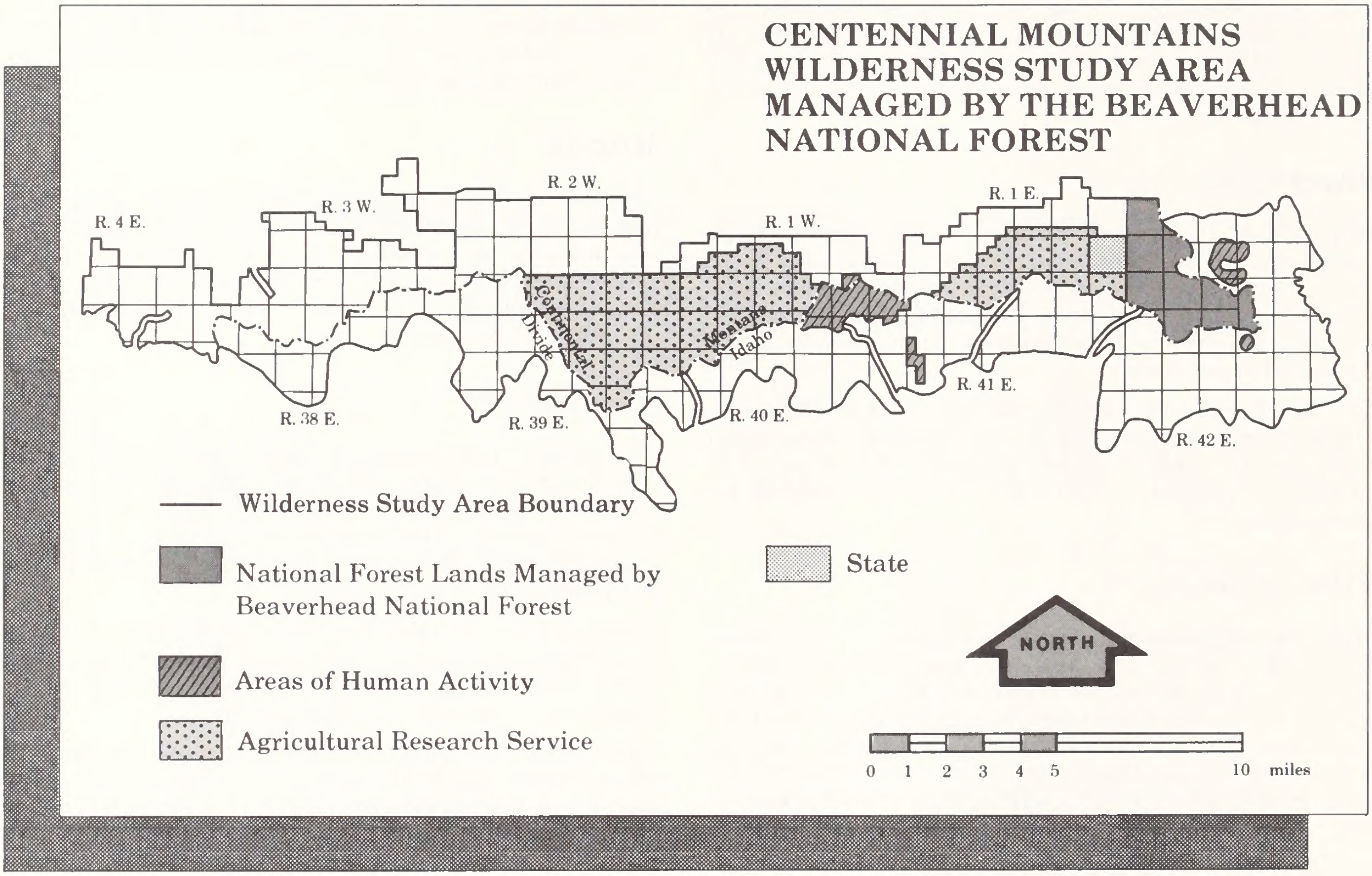
Natural fire was an issue mentioned by seven letters. The relationship of natural fires to controlling pine beetle infestation and enhancing wildlife habitat was mentioned by several respondents.

## Boundaries

Forty-four comments addressed the area covered by this study. Many asked that the Sheep Station lands be a part of the study. Several said that the area should be ecologically defined on the basis of habitat or watershed.

# APPENDIX B

# MANAGEMENT DIRECTION FOR THE MOUNT JEFFERSON ROADLESS AREA



CENTENNIAL MOUNTAINS WILDERNESS STUDY AREA MANAGED BY THE BEAVERHEAD NATIONAL FOREST

## FROM THE FOREST PLAN FOR THE BEAVERHEAD NATIONAL FOREST

## Management Area #1 (412,288 acres)

### Description

Management Area #1 consists of a wide variety of nonforest, noncommercial forest, and forested lands which are "unsuitable for timber production" but which accommodate numerous other resource uses. Topographic constraints, rocky soils, poor accessibility, and low timber resource values characterize the forested areas and lead to the unsuitable for timber management designation. In some portions of the Management Area, recreation opportunities, notably for hunting and fishing, are high. Wildlife habitat values are significant in some portions of the Management Area. Domestic livestock grazing occurs within allotments covering much of the rangeland included in this Management Area. Most of this area is encompassed by oil and gas leases. In some locations mineral potential is high or very high while in other areas, mineral values appear to be low.

## Management Goals

Maintain the existing opportunities for utilization of the variety of resources found within this Management Area, managing in a custodial role with a low level of investment. Protect existing investments and, where necessary to maintain the existing resource values, allow for low-cost, low intensity additional improvements. Generally, allow resource use with minimal restrictions, designed only to protect the existing status of other resource values.

## Management Direction

In addition to the Forest-wide Management Direction included in Chapter II of this Plan[1] the following standards apply to this Management Area.

| Resource Element | Standards |
|---|---|
| RECREATION | Dispersed Recreation — Dispersed recreation opportunities will be provided at a low level of investment that focuses primarily on travel planning and management and trail maintenance activities. Management activities will be oriented toward reducing impacts to other resource values, including protection of soil and water quality. Trail reconstruction and trailhead facility construction can occur where the existing array of other resource values is threatened with adverse impacts from dispersed recreation use or if public safety hazards exist. |
|  | The range of recreation opportunities defined by the Recreation Opportunity Spectrum (ROS) system and depicted in the Geographical Display Areas (Chapter III, Section II) will be maintained.[1] |
|  | Recreation facilities will normally not be constructed, however, sanitary facilities may be installed in areas suffering resource degradation. |
|  | Visual Quality — The visual quality objective for this Management Area is modification unless a portion of the Management Area is specifically recognized as a "sensitive viewing area" and identified in Appendix D. In that case, the VQO may be higher. Direction for "sensitive viewing areas" is contained in Appendix D.[1] |
| WILDLIFE AND FISHERIES | Habitat Improvement — Wildlife and fisheries habitat improvement projects will generally not be developed unless needed to correct existing habitat degradation. |
| RANGE | Range Management — Domestic livestock grazing is permitted at a low level of intensity. |
|  | Range Improvement — Existing improvements will be maintained and new improvements will be allowed, as needed, to facilitate management of adjacent Management Areas or to protect the existing resource values within this Management Area. |
| LANDS | Corridors — Within this Management Area, avoidance areas include (1) areas where the Visual Quality Objective is retention, and (2) key wildlife habitats such as wetlands and meadows. |

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[1] See the *Forest Plan for the Beaverhead National Forest*.

TIMBER

Timber Harvest — Timber harvest will not be scheduled in this Management Area. The Management Area is unsuitable for scheduled timber management. Timber salvage and firewood removal may occur where access exists. Salvage of dead, dying or high-hazard trees is permitted to prevent disease and insect population build-up.

FACILITIES

Road Construction — Roads will normally not be constructed for surface management objectives within this Management Area. Road construction will be allowed as necessary to access special uses, mineral development, or to provide access to other Management Areas consistent with the "area access guidelines" presented in Chapter IV, Geographic Display Areas.[1]

Maintenance — Existing roads and trails will be maintained as needed given the "area access guidelines."

PROTECTION

Fire Management — This Management Area is classified as an "Observation Fire Management Area" with the exception of some small isolated tracts that are classified as "Operational" due to their size and location. Fire will be allowed to play a more natural role except where such activity will be a threat to public safety or adversely affect existing improvements and resources within this or adjacent Management Areas. Fire management strategies include control, confine, and contain options. Additional direction is in the Fire Management Plan, Appendix U. In that appendix is situational guidance for the fire management strategies (see the flow diagram labeled "Appropriate Fire Suppression Response—Observational Areas").[2]

Prescribed Fire — Prescribed fires with planned and unplanned ignitions may be used as resource improvement tools. The low level of investment in this Management Area limits the emphasis on planned use of prescribed fire.

| **Schedule of Management Practices** | | **Average Annual**<br>**Decade 1 (Planned)** | **Decade 2 (Projected)** |
|---|---|---|---|
| Wildlife Habitat Improvement | (Acres) | 11 | 11 |
| | (Structures) | 2.5 | 2.5 |
| Range Improvements | (Acres) | 125 | 125 |
| Trail reconstruction | (Miles) | 1 | 1 |

(About 40 additional miles of trail reconstruction and construction would be needed for the Continental Divide Trail, once the route is located on the ground. These miles of trail will be removed from this Management Area and placed in Management Area #29).

## Monitoring Requirements

The monitoring requirements from Chapter VI that are applicable to this Management Area are: 1-1 through 1-11, 5-1, 5-3, 6-1 through 6-5, 8-1 through 8-4, 9-1. The procedures outlined in Chapter VI will be followed to evaluate the data gathered during monitoring.[1]

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[1] See the *Forest Plan for the Beaverhead National Forest.*

[2] Document on file at Supervisor's Office for the Beaverhead National Forest.

# Management Area #10 (4474 acres)

## Description

This Management Area consists of the Mt. Jefferson Further Planning Area which is being evaluated for Wilderness in a joint analysis that includes the Bureau of Land Management and the Targhee and Beaverhead National Forests. The Bureau of Land Management is the lead agency.

## Management Goals

Manage this further planning area to protect wilderness characteristics. To the extent possible, provide for existing uses where compatible with protecting wilderness character pending a recommendation regarding classification. If not recommended for wilderness classification, this Management Area will be assigned to Management Area 1. If recommended for wilderness management and if subsequently classified, this area will be assigned to Management Area 9.

## Management Direction

In the interim, while this area is in a "further planning" category, development activities such as timber harvest, road construction, and other activities that may reduce wilderness potential of the land will be prohibited. Activities permitted by prior rights, existing law, and other established uses may continue pending final disposition of the area. This allows recreationists and other Forest users continued use of motorized equipment within these areas as permitted or controlled by off-road vehicle management plans. Although no harvesting of timber will be allowed from these areas other than for emergency reasons, standing timber on commercial forest land in the area will be used to determine potential yield. Certain exploration activities for oil and gas resources may occur for information gathering prior to completion of Forest Plans.

In addition to the direction described above and the Forest-wide Management Direction, the following standards apply to this Management Area:

| Resource Element | Standards |
|---|---|
| RECREATION | Dispersed Recreation — Existing dispersed recreation opportunities, as defined by the ROS classification for the area and displayed in the Geographical Display Areas, will be maintained. Management activities will focus on maintenance of soil and water quality and protection of the wilderness attributes of the area. |
| | Visual Quality — The visual quality objective of preservation will be assigned to this area pending a recommendation regarding wilderness classification. |
| RANGE | Range Management — Existing permitted use will be allowed to continue. No additional permits will be issued. |
| TIMBER | Timber Harvest — Timber harvest will not be scheduled. |
| WILDLIFE | Habitat Improvement — Habitat improvements will be allowed consistent with maintenance of wilderness characteristics. |
| | Fish Stocking — Stocking of fish in streams and lakes will be allowed only where that activity has taken place in the past. |

| | |
|---|---|
| LANDS | Corridors — This Management Area is an exclusion area. |
| FACILITIES | Road Construction — Road construction for surface management purposes will not be allowed. |
| MINERALS | Oil and Gas Exploration — Only oil and gas activities for the purpose of discovering the extent of oil and gas deposits are allowed until separate Forest Service environmental analyses specifically concur with development and production activities. Oil and gas leases will include stipulations to strictly control exploration activities and minimize impacts on the roadless character and wilderness values of the area. |
| PROTECTION | Fire Management — This Management Area is classified as an "Observation Fire Management Area". Fires will be allowed to play a more natural role except where such activity will be a threat to public safety or adversely affect existing improvements or resources within this or adjacent Management Areas. Additional direction is contained in the Fire Management Plan (Appendix U). In that appendix is situational guidance for the fire management strategies (see the flow diagram labeled "Appropriate Fire Suppression Response—Observational Areas").[2] |
| | Prescribed Fire — Prescribed fires with planned and unplanned ignitions may be used as resource improvement tools. |

| | Average Annual | |
|---|---|---|
| **Schedule of Management Practices** | **Decade 1 (Planned)** | **Decade 2 (Projected)** |

No management practices are scheduled.

**Monitoring Requirements**

The monitoring requirements from Chapter VI that are applicable to this Management Area are: 5-1, 5-2, 6-1, 8-3, and 9-1. The procedures outlined in Chapter VI will be followed to evaluate the data gathered during monitoring.[1]

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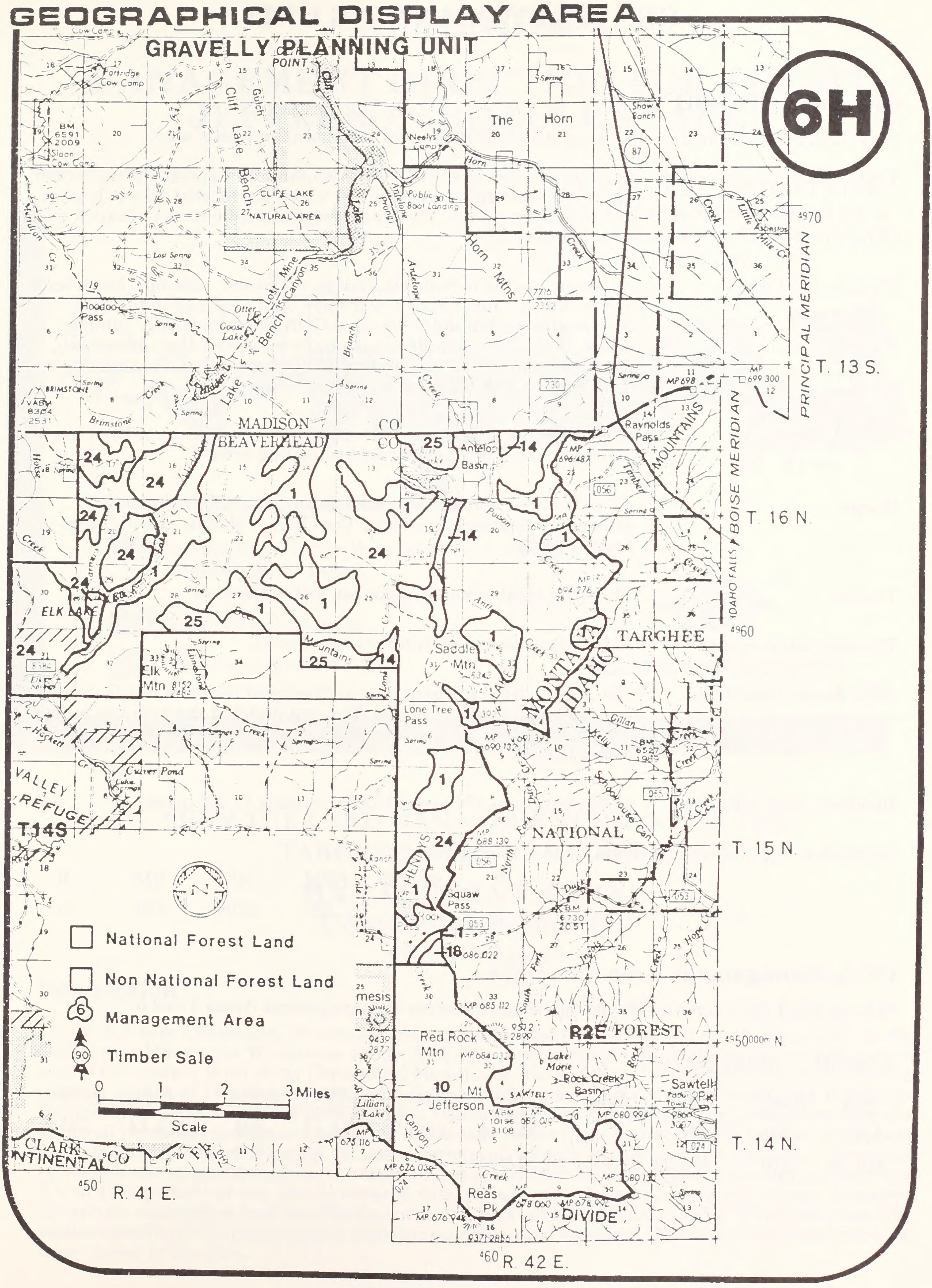
[1] See the *Forest Plan for the Beaverhead National Forest*.
[2] Document on file at Supervisor's Office for the Beaverhead National Forest.


GEOGRAPHICAL DISPLAY AREA
GRAVELLY PLANNING UNIT
6H
Cliff Lake Bench
CLIFF LAKE NATURAL AREA
The Horn
Horn Mtns
Hoodoo Pass
Goose Lake
Lost Mine Canyon
Antelope Basin
Raynolds Pass
MOUNTAINS
PRINCIPAL MERIDIAN
BOISE MERIDIAN
IDAHO FALLS
T. 13 S.
T. 16 N.
T. 15 N.
T. 14 N.
T14S
MADISON CO
BEAVERHEAD CO
ELK LAKE
Elk Mtn
Saddle Mtn
Lone Tree Pass
MONTANA
IDAHO
TARGHEE
NATIONAL
FOREST
R2E
VALLEY REFUGE
Culver Pond
Squaw Pass
Red Rock Mtn
Mt Jefferson
Lake Marie
Rock Creek Basin
Sawtell Pk
Reas Pk
DIVIDE
CLARK CO
CONTINENTAL
Lillian Lake
R. 41 E.
R. 42 E.
National Forest Land
Non National Forest Land
Management Area
Timber Sale
0 1 2 3 Miles
Scale

# GRAVELLY PLANNING UNIT

## Gravelly: GDA-6H

This GDA includes the Elk Lake area, Antelope Basin and the Mount Jefferson area.

| | |
|---|---|
| Vegetative Characteristics | Vegetative cover in the GDA is predominantly grassland-sagebrush. There are scattered areas of forest which are mostly lodgepole pine or Douglas-fir stands. There are also scattered patches of aspen and open Douglas-fir. |
| Wildlife and Fish | Big game species include elk, moose, mule deer, antelope, black bear, and mountain lion. Grizzly bear have been observed in the area. Bald eagles nest in the GDA. This GDA provides mostly summer range. However, a few elk occasionally winter on Horn Mountain, Elk Mountain and in the vicinity of Elk Lake. Elk Lake supports a good fishery including the arctic grayling. |
| Recreation | Recreation use is dispersed except for the small resort at Elk Lake. Antelope Basin is a popular snowmobiling area. |
| Range | All of the area north of Red Rock Pass is included in intensive grazing management systems. The GDA is blanketed with range developments. |
| Timber | There are small patches of timber within the area. |
| Transportation System | Road access to and within the area is good. |
| Area Access Guidelines | The Mount Jefferson area has no developed facilities (roads or trails maintained for public access). The remainder of the area has access via roads and trails open to motorized public access, with no restrictions. |
| Roadless Area Inventory | 1-962 contains 4,474 acres. 1029B contains 12,495 acres. |

Recreation Opportunity Spectrum (Future Condition)

| | P | SPNM | SPM | RN | RM | R |
|---|---|---|---|---|---|---|
| Acres | 0 | 4160 | 17,280 | 3700 | 870 | 0 |

## GDA-Management Area Summary

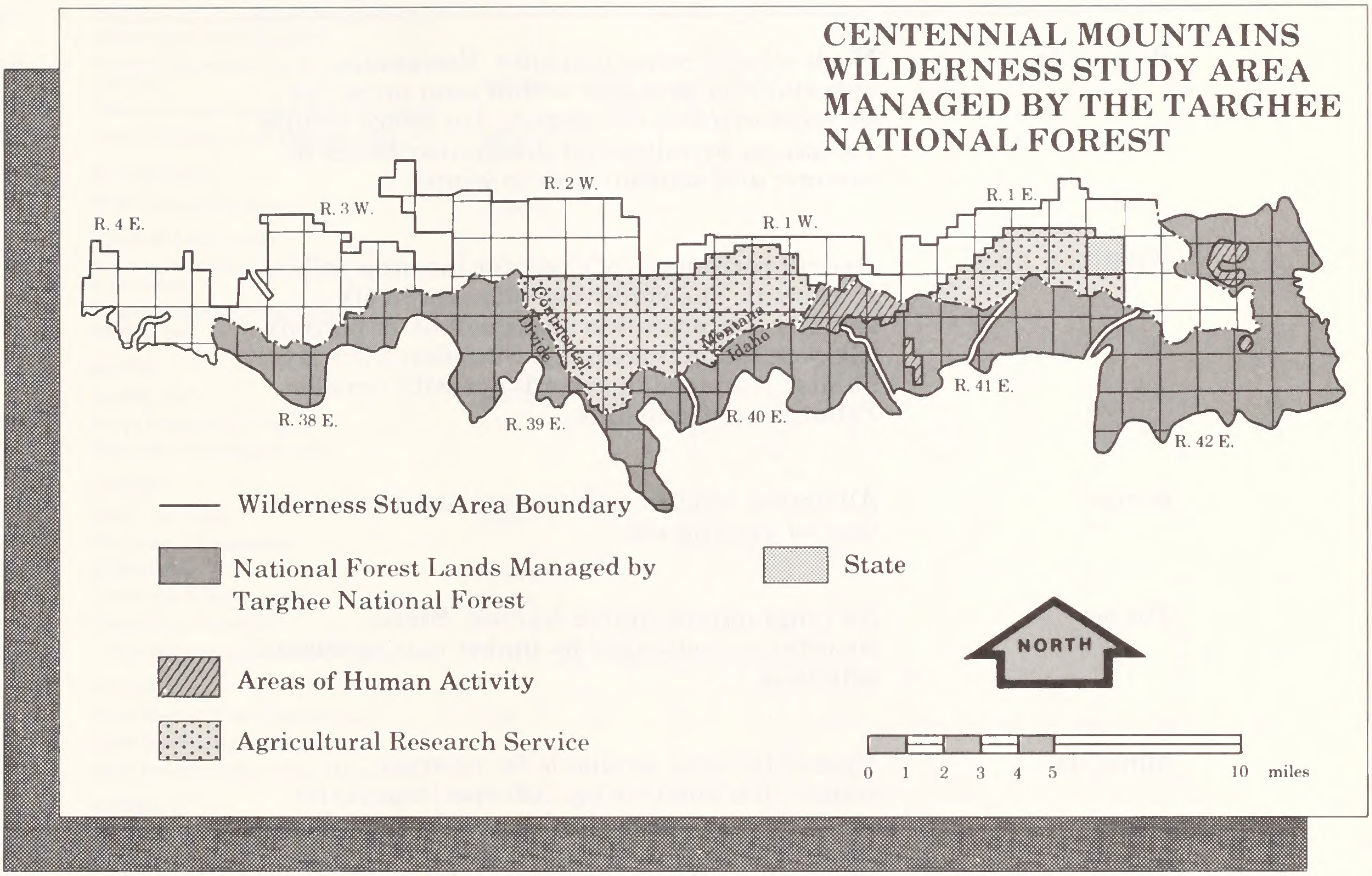
Management Area acres displayed below include acres in Management Areas 4 and 5.

GDA 6H (26,010 Acres)

| MA | Acres | MA | Acres | MA | Acres | MA | Acres | MA | Acres |
|---|---|---|---|---|---|---|---|---|---|
| MA 1 | 4976 | MA 3 | 4 | MA 10 | 4474 | MA 11 | 336 | MA 14 | 245 |
| MA 18 | 107 | MA 24 | 15,453 | MA 25 | 515 | | | | |

# APPENDIX C

# MANAGEMENT DIRECTION FOR THE MT. JEFFERSON ROADLESS AREA



CENTENNIAL MOUNTAINS
WILDERNESS STUDY AREA
MANAGED BY THE TARGHEE
NATIONAL FOREST

## FROM THE LAND MANAGEMENT PLAN FOR THE TARGHEE NATIONAL FOREST

## MANAGEMENT AREA 5

### Centennial Mountains

### 45,500 Acres

### Description

The 45,500 acre Centennial Mountains Management Area consists of the lands designated as the Centennial Mountains Wilderness Study Area. The area contains the upper slopes and mountain tops of the eastern third of the Centennial Mountains. Most of these lands lie above timber line, but isolated stands of Douglas-fir, subalpine fir and limber pine do occur. Open sagebrush and grass communities make up a large portion of the vegetative cover. Few perennial streams flow from the area, but perennial springs are common. The area provides high quality wildlife habitat and forage for extensive livestock grazing. A large variety of wildlife species occupy the area. Dispersed recreation use occurs throughout the summer, but snowmobiling is the primary recreational activity. About fifty percent of the area is covered with oil and gas leases or lease applications. Intensive phosphate exploration took place in the early 1960's on leaseholds in the Taylor Mountain Area. The western portion of the area possibly contains economic coal resources. Building stone is also removed from claims in the area.

## Desired Future Conditions — 1st Decade

The Management Area will remain essentially undeveloped.*

| Resource | Desired Future Condition (1990) |
|---|---|
| Recreation | No developed recreation sites. Recreation opportunities provided within semi-primitive non-motorized ROS category, but motor vehicle exceptions permitted for designated routes in summer and snowmobiles in winter. |
| Wildlife & Fish | Overall percentage of cover for the area will be 75 percent. The percentage of cover in elk summer concentration areas will be 75 percent. Elk population increasing. Situation 2 grizzly habitat managed in accordance with Greater Yellowstone Guidelines. |
| Range | Allotment conditions improved and increase in level of grazing use. |
| Timber | No programmed timber harvest. Stand conditions unchanged by timber management activities. |
| Minerals | Most of the area available for mineral exploration and leasing. Adverse impacts on sensitive resources are mitigated by compliance with requirements of applicable special stipulations. Some activities prohibited in "Highly Environmentally Sensitive" areas. |
| Water and Soil | Rate of soil erosion dependent on amount of mineral activity but retained on-site; quantity of water unchanged; slight increase in acre/feet of water meeting quality standards. |

*Management will be to protect wilderness potential of the area until a joint wilderness study is completed by the Forest Service and Bureau of Land Management for this area and the contiguous BLM primitive area.

## TIMING OF PROPOSED AND PROBABLE PRACTICES*

| MIH Code | Proposed and Probable Management Practices and Activities | Unit of Measure | 1981 | 1982 | 1983 | 1984 | 1985 | 86-90 | 91-2000 | 2001-2010 | 2011-2020 | 2021-2030 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECREATION | | | | | | | | | | | |
| | Developed Recreation Use | MRVD's | | | | | | | | | | |
| A06 | Recreation or VIS Site Construction | | | | | | | | | | | |
| A05 | Recreation or VIS Site Rehabilitation | | | | | | | | | | | |
| A07 | Administration Operation and Maintenance of Developed Recreation Sites | | | | | | | | | | | |
| A08 | Dispersed Recreation Use including Wildlife and Fish | MRVD's | 24.9 | 26.7 | 26.7 | 11.7 | 11.8 | 12.4 | 13.6 | 14.9 | 16.4 | 18.0 |
| A10, A11 | Management of Dispersed Recreation Areas | | X | X | X | X | X | X | X | X | X | X |
| L22 | Trail Construction and Reconstruction | Miles | | | | | | .1 | .6 | .6 | .6 | .6 |
| | WILDERNESS | | | | | | | | | | | |
| B03 | Wilderness Management | M Acres | | | | | | | | | | |
| | WILDLIFE AND FISH | | | | | | | | | | | |
| C02 | Non-Structural Wildlife or Fish Habitat Improvement | Acres | | | | | | | 10 | 10 | 10 | 10 |
| C03 | Structural Wildlife or Fish Habitat Improvement | Number | | | | | | | 4 | 4 | 4 | 4 |
| | RANGE | | | | | | | | | | | |
| | Grazing Use | MAUM's | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.4 |
| D03 | Range Forage Improvement | | X | X | X | X | X | X | X | X | X | X |
| D05 | Range Structural Improvement | | X | X | X | X | X | X | X | X | X | X |
| | TIMBER | | | | | | | | | | | |
| | Timber Harvested | MMBF | | | | | | | 2.5 | 1.6 | 3.5 | 2.6 |
| E03 | Silvicultural Examination | | | | | | | | | | | |
| E04 | Reforestation | M Acres | | | | | | | .5 | .4 | .4 | .1 |
| E05 | Timber Stand Improvement | M Acres | | | | | | | | .1 | .1 | .1 |
| E06 | Timber Sale Preparation | | | | | | | | X | X | X | X |
| E07 | Timber Harvest Administration | | | | | | | | X | X | X | X |
| | WATER | | | | | | | | | | | |
| | Water Meeting Water Quality Goals | MAF | 64.1 | 64.1 | 64.1 | 64.1 | 64.1 | 65.0 | 66.0 | 66.0 | 66.0 | 66.0 |
| F05, F03 | Water Resource Improvement | | | | | | | X | X | | | |
| F08 | Water Resource Improvement Maintenance | | | | X | X | X | X | X | X | X | X |
| | MINERALS | | | | | | | | | | | |
| G04, G05 | Mineral Leases and Permits | Number | 10 | 11 | 12 | 10 | 10 | 10 | 10 | 11 | 13 | 15 |
| G04, G05 | Minerals Management - Oil and Gas | | X | X | X | X | X | X | X | X | X | X |
| G04, G05 | Minerals Management - Coal | | X | X | X | X | X | X | X | | | |
| G04, G05 | Minerals Management - Geothermal | | | | | | | | | | | |
| G04, G05 | Minerals Management - Uranium | | | | | | | | | | | |
| G04, G05 | Minerals Management - Non-Energy | | X | X | X | X | X | X | X | X | X | X |
| G05, G06 | Minerals Management - Common Minerals Material | | X | X | X | X | X | X | X | X | X | X |
| | PROTECTION | | | | | | | | | | | |
| P11-P14 | Treatment of Fuels | M Acres | | | | | | | | | | |
| | LANDS | | | | | | | | | | | |
| J01 | Special Use Management | | X | X | X | X | X | X | X | X | X | X |
| J02 | Right-of-Way Grants | | | | | | | | | | | |
| J04 | Withdrawals, Modifications and Revocations | | | | X | X | X | X | | | | |
| J06 | Property Boundary Location | | | | | | | | | | | |
| J13 | Land Exchange | | | | | | | | | | | |
| J15 | Land Acquisition | | | | | | | | | | | |
| J18 | Right-of-Way Acquisition | | | | | | | | | | | |
| | SOILS | | | | | | | | | | | |
| F03 | Soil Resource Improvement | Acres | | | | | | | 10 | 5 | 5 | 5 |
| | FACILITIES | | | | | | | | | | | |
| L04, L05 | Arterial Road Construction/Reconstruction | Miles | | | | | | | | | | |
| L08, L09 | Collector Road Construction/Reconstruction | Miles | | | | | | 4.1 | | | | |
| L12, L13 | Local Road Construction/Reconstruction | | | | | | | | | | | |
| L19 | Road Maintenance | | | X | | X | | X | X | X | X | X |

*All values for multi-year periods represent annual averages.
X indicates practice will occur during the time period shown.

## Element A — Recreation (Dispersed)

A. Accommodate a variety of recreation activities within the Recreation Opportunity Spectrum at specified service level:

| | ROS Categories | Inventory Acres | Target Acres[1] | Target Acres | |
|---|---|---|---|---|---|
| | | | | FSM | RSM |
| I. | Primitive | 0 | 0 | 0 | 0 |
| II. | Semi-Primitive Non-Motorized | 36,830 | 40,740 | 40,740 | 0 |
| III. | Semi-Primitive Motorized | 2,205 | 0 | 0 | 0 |
| IV. | Roaded Natural Appearing | 6,465 | 4,760 | 4,760 | 0 |
| V. | Rural | 0 | 0 | 0 | 0 |
| | TOTAL | 45,500 | 45,500 | | |

[1] Refer to Map Number 2. [1]

B. Regulate motor vehicle use to meet objectives of ROS target classification.

| | ROS Categories | Target Acres | Restricted or Closed Area[1] | Motor vehicle use restrictions |
|---|---|---|---|---|
| I. | Primitive | 0 | 0 | N/A |
| II. | Semi-Primitive Non-Motorized | 40,740 | 40,740 | Closed to all motorized vehicles except snowmobiles. |
| III. | Semi-Primitive Motorized | 0 | 0 | N/A |
| IV. | Roaded Natural Appearing | 4,760 | 4,760 | Closed to all motorized vehicles except on the following designated roads:<br>East Dry Creek Road<br>Keg Springs Road to Continental Divide<br>Open to snowmobiles. |
| V. | Rural | 0 | 0 | N/A |

[1] Refer to Map Number 12. [1]

C. Maintain trail system to provide recreational access in accordance with Ranger District trail maintenance plans.

D. Designate Continental Divide Trail route and establish and maintain trail in accordance with Continental Divide Trail Plan.

E. Support and participate in studying the Centennial Wilderness potential.

F. Helicopter skiing will not be allowed pending determination of wilderness/non-wilderness status.

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[1] See *Maps for the Land Management Plan and Final EIS for the Targhee National Forest.*

## Element B — Recreation (Visual Quality)

A. Manage landscape to achieve the following visual quality objectives.

| Visual Quality Objective | Inventory Acres | Target Acres[1] |
|---|---|---|
| Retention | 7,710 | 8,130 |
| Partial Retention | 26,370 | 37,370 |
| Modification | 10,900 | 0 |
| Max. Modification | 520 | 0 |
| TOTAL | 45,500 | 45,500 |

[1] Refer to Map Number 3.[1]

## Element C — Wildlife & Fish

A. Manage big game habitat to meet the following population objectives:

| | Management Area Population[1] | | | |
|---|---|---|---|---|
| | Current | | Objective 1990 | |
| Species | Summer | Winter | Summer | Winter |
| Elk | 250 | 0 | 300 | 0 |
| Deer | 130 | 0 | 150 | 0 |
| Moose | 70 | 0 | 80 | 0 |

[1] Big game population estimates are inexact and variable, but are shown to provide a sense of intended management direction.

B. Manage big game habitat on seasonal ranges to provide the following levels of forage and cover:

| | Acres | | | | | | Conifer Cover (Percent)[3] | |
|---|---|---|---|---|---|---|---|---|
| Species and Season[1] | Total | Adjusted[2] | Months | AUMs | Aspen (Percent) | Unproductive Forest (Percent) | Current | Objective —1990 |
| Management Area Total | 45,500 | 44,525 | | | [4] | 20 | 73 | 75 |
| Elk Calving[5] | | | 2 | 126 | | | | |
| Elk Summer | 45,500 | 44,525 | 5 | 450 | | | 73 | 75 |

[1] Refer to Map Number 4. [1]

[2] Includes conifer cover, unproductive forest, aspen and natural openings less than 100 acres.

[3] Does not include aspen or unproductive forest.

[4] Less than 1%.

[5] See Management Area 4.

C. Regulate motor vehicle use to prevent damage or adverse affect to wildlife and fish habitat in the following areas:

| Area | Acres | Specific Action |
|---|---|---|
| Centennial Mtns. | 45,500 | Closed to all motorized vehicle use except on the following designated roads:<br>East Dry Creek Road<br>Keg Springs Road to Continental Divide<br>Open to snowmobiles. |

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[1] See *Maps for the Land Management Plan and Final EIS for the Targhee National Forest.*

D. Areas delineated as Situation 2 Grizzly Bear Habitat will be managed in accordance with Greater Yellowstone Guidelines (26,000 acres — See Map 5).[1]

E. Manage stands to provide old growth conditions:

| Type | Acres of Timber in a Mature Condition Class[1] |  | Acres of Capable Forest Land Scheduled for Long Term Old Growth Management[2] |
|---|---|---|---|
|  | Existing | Retained 1990 |  |
| Mixed Fir | 39,290 | 39,290 | 1,036 |

[1] Includes all acres classified as forest land (lands at least 16 percent stocked with trees).

[2] Capable forest land is land capable of producing 20 cubic feet of timber per acre, per year. One-half of the acres will be old growth (140 - 240 years old) with the remainder less than 140 years, but designated as replacement.

## Element D — Range

A The livestock grazing allotments will be managed as shown below:

| Allotment Name and Number and Kind of Livestock | FRES Level |  | AUM's |  | Allotment Plan |  | Range Analysis |  |
|---|---|---|---|---|---|---|---|---|
|  | Current | Proposed | Current | Proposed | Date Written | Date Update | Date Compl. | Date Update |
| Table Mtn. (160)(s) | D | D | 640 |  |  | 1982 | 1963 |  |
| Icehouse Willow Creek (223)(s) | C | C | 642 |  | 1966 | 1984 | 1962 | 1983 |
| TOTAL |  |  | 1,282 | 1,580 |  |  |  |  |

B. The following table shows the livestock allotments within this management area and the acres by range condition class. The objective is to improve the fair and poor ranges until they are in good or excellent condition. This improvement will be through installation of structural improvements, management of the livestock and direct vegetative improvements such as brush control or seeding where cost effective.

| Allotment Name & Number | Excellent Acres | Good Acres | Fair Acres | Poor Acres | Very Poor Acres |
|---|---|---|---|---|---|
| Table Mountain | 927 | 1,891 | 175 |  |  |
| Icehouse-Willow Cr. | 1,428 | 3,038 | 4,542 | 1,601 | 492 |
| TOTAL | 2,355 | 4,929 | 4,717 | 1,601 | 492 |

C. The following areas are closed to livestock use:

| Name of Area | Acres | Reason for Closure |
|---|---|---|
| Slide Mountain | 3,200 | Soils |
| Taylor Mountain | 2,400 | Soils |
| Keg Spring | 1,200 | Soils & Recreation |
| Mt. Jefferson | 7,500 | Soils |
| Burnt Canyon | 1,000 | Soils |

Evaluate the above closures by 1990 to determine if they are still needed. If not, the areas will be grazed lightly in conjunction with adjacent sheep allotments.

D. Provide 9 AUM's of forage for recreational livestock.

[1] See *Maps for the Land Management Plan and Final EIS for the Targhee National Forest.*

### Element E — Timber

A. Lands are designated as not suited for timber harvest during the first decade.

### Element F & K — Water & Soil

A. This area contains approximately 1,185 acres of riparian habitat. Manage according to the riparian area prescription (Appendix E).[2]

B. Maintain East Fork Hotel Creek and Rock Creek watershed stabilization projects.

### Element G — Minerals

A. If oil and gas lease applications are received, recommend issuance on available acreage utilizing special stipulations for specified conditions. Recommend denial of leases on acreage not available for lease.

| Acreage Open to Leasing | Acreage Not Available For Lease | Acreage Under Lease | Acreage Under Lease Application |
|---|---|---|---|
| 45,500 | 0 | 7,000 | 8,000 |

B. If lease applications are received for non-energy minerals, recommend issuance on available acreage utilizing special stipulations for specified conditions. Recommend denial of leases on acreage not available for lease.

| Acreage Open to Leasing | Acreage Not Available For Lease | Acreage Under Lease | Acreage Under Lease Application |
|---|---|---|---|
| 45,500 | 0 | 2,100<br>(Phosphate) | 0 |

C. Recommend special stipulations as a condition of mineral leases (recommended to Bureau of Land Management). (See Table C, next page)

D. Administer existing claims for the following locatables (Hard Rock Minerals):

| Target Mineral | Claim Acres |
|---|---|
| Building Stone | 300 |

E. The Conditional No Surface Occupancy Stipulation will be recommended for attachment to lease offers on lands defined as a highly environmentally sensitive area (HES). An HES is an area with definable environmental characteristics which would be irreversibly altered by exploration activities. This includes areas:

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[2] See *Land Management Plan for the Targhee National Forest.*

## Table C

| No. | Stipulation Summary[1] | ROS I | Retention/Partial Retention | NFRS Developed Recreation Site | High Mass Instability | Steep Slope greater than 40% | Riparian | Seasonal Wildlife Habitat | T&E Habitat | Administrative Site | Wilderness Study Area | RNA (Research Natural Area) | Significant Cultural Area | Municipal/Watershed | All Areas |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Area/Environmental Condition** | | | | | | | | | | | | | |
| 1 | No Occupancy - Entire Lease Area | | | | | | | | | | | | | | |
| 2 | Visual - Road, Structure, etc. | | X | | | | | | | | | | | | |
| 3 | No Occupancy - Legal Subdivision | | X | | | | | | | | | | X | | |
| 4 | No Surface Occupancy Adjacent to Road, River, Trail, Canal, etc. | | X | | | | | | | | | | | | |
| 5 | No Drilling or Storage near Reservoir, Archaeological Site, Paleontological Site, etc. | | | | | | X | | | | | | X | | |
| 6 | No Surface Occupancy - Steep Slopes | | | | | X | | | | | | | | | |
| 7 | No Surface Occupancy - Seasonal | | | | | | | | | | | | | | |
| 8 | Prohibit Activity - Muddy or Wet Periods | | | | | | | | | | | | | | X |
| 9 | Restricted Trail/Road | | | | | | | | | | | | | | X |
| 10 | Visual - Painting or Camouflage | | X | | | | | | | | | | | | |
| 11 | No Surface Occupancy (May replace Numbers 1, 3, and 6) | | | | | X | | | | | | | | | |
| 12 | No Drilling, Storage, Surface Disturbance next to ... (may replace Numbers 4 and 5) | | X | | | | X | | | | | | | | |
| 13 | No Surface Disturbance, Exploration, Drilling ... (may replace Number 7) | | | | | X | | | | | | | | | X |
| 14 | Controlled or Limited Surface Use | | X | | | | | | | | | | | | |
| 15 | Activity Coordination | | | | | | | | X | | | | | | |
| 16 | Protection of T&E Species | | | | | | | | X | | | | | | |
| 17 | Further Planning Area | | | | | | | | | | X | | | | |
| 18 | Coordinated Exploration | | | | | | | | | | X | | | | |
| 19 | Conditional No Surface Occupancy | | | | | | | | | | X | | | | |
| 20 | Unstable Soils | | | | | | | | | | X | | | | |
| 21 | Special Wildlife and Fisheries Habitat | | | | | | | | | | X | | | | |

[1] See Appendix K for complete text of stipulations.[2]

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[2] See *Land Management Plan for the Targhee National Forest.*

1. Where reclamation (reestablishment of vegetation) would be difficult.

2. Over 40% slopes (a general guide for the area, which may be modified on a site specific basis).

3. Designated as necessary for the protection and/or recovery of Threatened or Endangered species.

4. Of unique plant or animal species and/or communities. (Regionally unique).

5. Where significant cultural resources exist.

F. Phosphate Leases — will be guided by the Taylor Mountain Reclamation Plan and Phosphate Lease Readjustment Stipulations. Implement plan recommendations and gain cooperation of lessees on an annual basis. Review and update reclamation plans.

The goals and objectives of reclamation are as follows:

a. Goals

    (1) Stabilize the area as much as possible and practical.

    (2) Improve esthetics of the area.

b. Objectives

    (1) Prevent water from entering open pits from off-site sources.

    (2) Control surface runoff within the pits so that erosion is reduced.

    (3) Trap sediment within the pits to enhance establishment of vegetation.

    (4) Water bar and close unnecessary roads.

    (5) Seed and fertilize all disturbed surfaces.

    (6) Secure mine entrances to prevent access by the public.

G. Be guided by the management guidelines for leasable minerals when developing operating plan mitigating measures. Exhaust all alternatives to unreasonable restrictions to claimants rights although such activities are generally non-conforming to a wilderness environment.

H. Do not consent to coal leasing. Consent to coal exploration license on those lands that are not excluded under the unsuitability criteria. Exploration will be governed by the following direction:

1. Prepare environmental assessments to coordinate site specific exploration and associated activities with transportation systems and other resource values and management.

2. Periodically review exploration activities to determine cumulative effects.

3. Maintain land stability on sensitive, steep, and unstable slopes where activities can trigger mass soil movement. Allow activities only when impacts can be fully mitigated.

4. More specifically, coal exploration will be subject to the following terms: These are not all inclusive, other mitigating measures such as those in Table C, may be needed dependent on a case by case review of site specific proposals supported by an environmental analysis.

a. Prior to any surface disturbance, a clearance for threatened and endangered species, paleontology, and archeology is required.

b. Floodplains will be determined prior to approval of an operations plan. The occupation of channels and floodplains shall be allowed only if no suitable alternative is available.

c. All support facilities structures, equipment, and similar development will be removed from the exploration area within one year after the final termination of use of such facilities. All disturbed areas and those areas occupied by such facilities will be rehabilitated in accordance with an approved Reclamation Plan, 30 CFR 211 and the "Surface Mining Control and Reclamation Act of 1977" as applicable.

d. All operations shall be conducted so as to comply with the Federal Water Pollution Control Act (33 U.S.C. 1151-1175) and the Clean Air Act (42 U.S.C. 1857).

e. If removal of timber is required for clearing of construction sites, etc., such timber shall be removed in accordance with Forest Service regulations.

f. All suitable topsoil on disturbed areas, i.e., drill pads and new road areas will be properly stockpiled for reuse when operations in the area are completed.

g. All disturbed areas will be restored to the original contours, to the extent possible, using stockpiled topsoil. The sites will then be revegetated with a plant species mixture specified by the appropriate surface management agency. Timing and method of revegetation will also be determined by the surface management agency.

### Element L — Facilities

Reconstruct East Dry Creek Road, No. 80327 and Keg Springs Road, No. 80042, to the standard needed to protect soil and water resources.

### Element P — Protection

Manage according to direction contained in the High Country Fire Management Plan (See Appendix I).[2]

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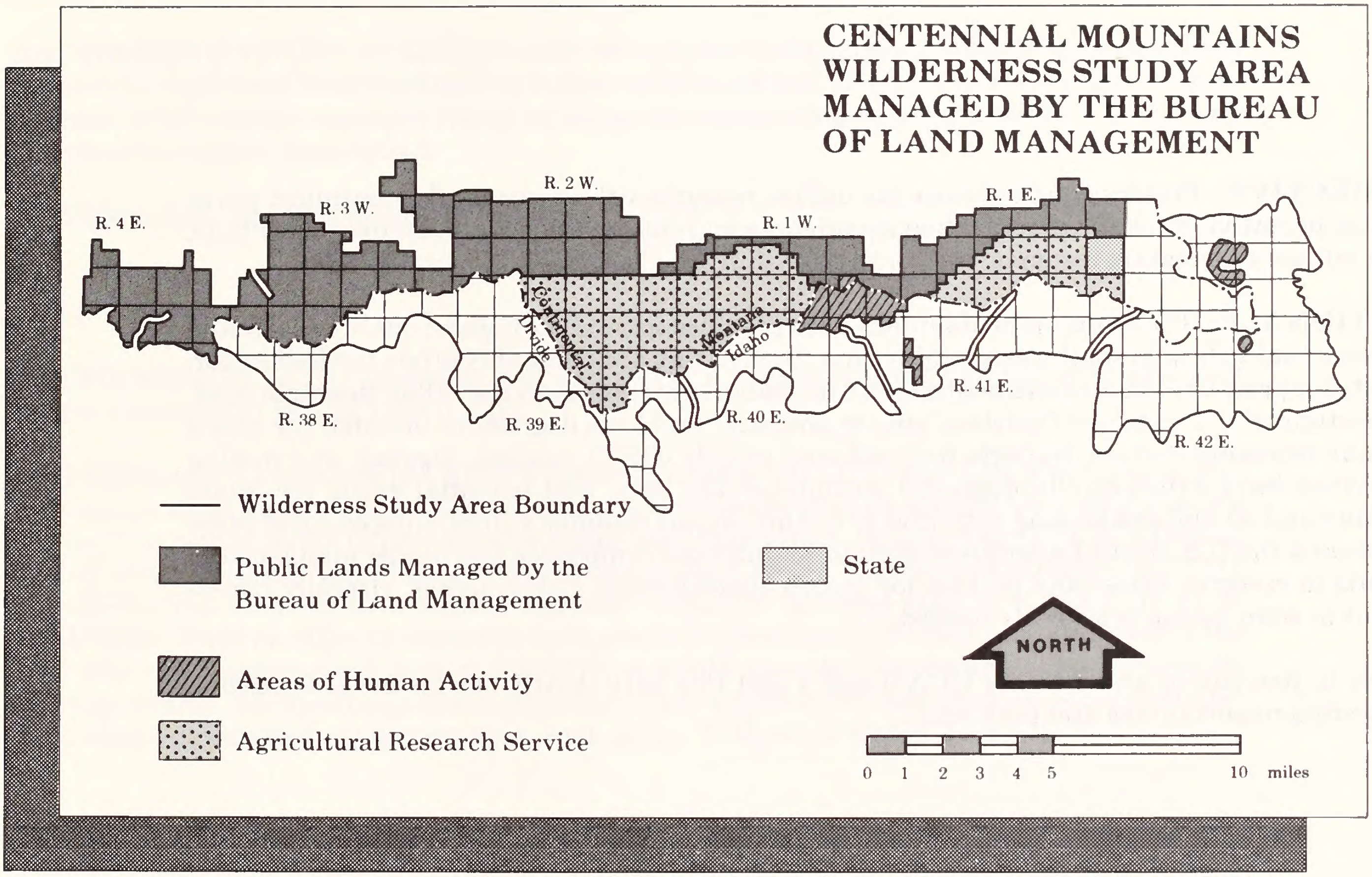
[2] See *Land Management Plan for the Targhee National Forest.*

# APPENDIX D

# MANAGEMENT DIRECTION FOR THE CENTENNIAL MOUNTAIN AREA MANAGED BY THE BUREAU OF LAND MANAGEMENT



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**MANAGEMENT FRAMEWORK PLAN – STEP 1**
ACTIVITY OBJECTIVES

Name *(MFP)*
DILLON
Activity
RECREATION
Objective Number
R-6

**OBJECTIVE:** Preserve and enhance the unique resource values; ensure the continued provision of primitive, unconfined recreation experiences and outstanding opportunities for solitude; and mitigate recreation resource/use conflicts within the Centennial Mountains Area.

**RATIONALE:** The Centennial Mountain Area provides some of the highest quality scenic and recreational values in southwestern Montana. In fact, this area probably offers the best opportunity for primitive, unconfined solitude and recreation experiences in the Dillon Resource Area. Unfortunately, a number of existing and/or potential problems degrade or threaten the area's unique recreation values. Impacts from off-road vehicle (ORV), grazing, logging, and mining activities have substantially degraded portions of the area. The potential exists for future mining and oil and gas leasing activities to further impair resource values. Intermingled State lands and the U.S. Sheep Experiment Station Withdrawal complicate and hinder management efforts to preserve values and provide for needed opportunities. Public access, virtually nonexistent in some areas, is urgently needed.

Refer to Recreation and Wildlife URA 3 and 4 and File 8310 (RAIF) for further information regarding opportunities and problems.

*(Instructions on reverse)*

Form 1600–20 (April 1975)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**MANAGEMENT FRAMEWORK PLAN – STEP 1**
ACTIVITY OBJECTIVES

| | |
|---|---|
| Name *(MFP)* | DILLON |
| Activity | RECREATION |
| Objective Number | B-R-1 |

**R-6.1**

**RECOMMENDATION:** If the Centennial Mountains Instant Study Area is not designated wilderness, institute a motorized vehicle closure within one year after denial as a wilderness area to preserve the unique resources and to enhance the outstanding opportunities for solitude and primitive recreation experiences.

**RATIONALE:** See R-6 Objective Rationale.

**R-6.3**

**RECOMMENDATION:** Complete and implement a trail alignment and management plan for the Continental Divide Trail (CDT).

**RATIONALE:** In response to a BLM-WASO comment in the CDT Final EIS, it was stated that the final location for the trail alignment had not been made, thus an opportunity exists to align the trail on public lands (BLM) located along the Continental Divide. The CDT EIS further indicated that priority would be given to aligning the CDT on existing trails which met CDT standards. The Canada to Wyoming segment would be the first portion of the CDT to be established. Thus an effort is needed to have a trail in place for CDT consideration. Even if the trail was not designated as part of the CDT, it would provide outstanding opportunities for hunting, hiking, backpacking, and sightseeing. Such a trail would also be an important component of any designated wilderness area, such as the Wilderness Study Area.

**R-6.4**

**RECOMMENDATION:** Acquire via land exchange the following parcels of land owned by the State of Montana:

Section 36, T14S, R4W (640 acres)
Section 36, T14S, R3W (640 acres)
Section 36, T14S, R2W (560 acres)
Section 36, T14S, RIW (600 acres)
Section 36, T14N, RIE (640 acres)
Section 16, T15S, R2W (40 acres)

**RATIONALE:** These lands are intermingled with public land throughout the Centennial Mountain area. The location has and will continue to create critical management problems in regard to maintenance of scenic and recreation values on adjacent public lands (i.e. timber harvesting, oil and gas leasing, livestock grazing, etc.). Acquiring these parcels would give the BLM critically needed management control over activities occurring on these lands and important recreation resource values for primitive, unconfined recreational opportunities.

*(Instructions on reverse)*

Form 1600–20 (April 1975)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**MANAGEMENT FRAMEWORK PLAN – STEP 1**
ACTIVITY OBJECTIVES

Name *(MFP)*
DILLON
Activity
RECREATION
Objective Number
B R-1

**R-6.6**

**RECOMMENDATION:** If a cooperative management agreement with the Science and Education Administration concerning the management of the U.S. Sheep Experiment Station withdrawal lands does not materialize, action to revoke the withdrawal should proceed immediately.

**RATIONALE:** The very best primitive resource values in the Centennial Mountains are contained within the Sheep Experiment Station boundaries. Past resource abuses from ORV use on these lands have highlighted the Station's inability to prevent resource degradation. In fact, the Station is not equipped with management authority or expertise needed to cope with recreation, wildlife, or other management functions which are essential for the maintenance of the area's unique values.

**R-6.7**

**RECOMMENDATION:** Retain the Sheep Mountain (unleased), Tom Creek (0154-0701), and Davis (0737) Custodial tracts under BLM administration, and exclude all grazing on these parcels.

**RATIONALE:** These custodial tracts are located within the Centennial Mountains Instant Wilderness Study Area and contain some of the most important scenic and recreational values in this potential wilderness area. Significant portions of these parcels are unsuitable for grazing purposes due to steep terrain or thick overstories of conifers. The most beneficial use of these lands would be to provide for the maintenance of scenic and primitive recreational values.

**M-6.2**

**RECOMMENDATION:** Protect the geologic feature such as the prominent north-facing Centennial Range fault escarpment. This major feature can be seen for miles and it is of considerable scientific significance. Nemesis Mountain and Sheep Mountain comprise this feature. This feature trends east-west from Nemesis Mountain (Section 25, T14S, RIE) to the west end of Sheep Mountain (Section 29, T14S, RIW).

**RATIONALE:** Protection is required by the Antiquities Act of 1906, and by the BLM Manual (1603.12 C2C-3-4). It states that we are mandated to preserve primitive and natural values.

**R-6.5**

**RECOMMENDATION:** Withdraw all public lands from locatable or leaseable minerals within the Centennial Mountains. Areas already leased should be withdrawn following lease expirations.

| | |
|---|---|
| UNITED STATES<br>DEPARTMENT OF THE INTERIOR<br>BUREAU OF LAND MANAGEMENT | Name *(MFP)*<br>DILLON |
| | Activity<br>RECREATION |
| **MANAGEMENT FRAMEWORK PLAN – STEP 1**<br>ACTIVITY OBJECTIVES | Objective Number<br>B-R-1 |

**RATIONALE:** The potential for mining disturbances occurring within the Centennial Mountains is highlighted by the numerous leases throughout the area. Any type of mining activity occurring on the delineated lands would be totally incompatible with the intended management objective of providing for primitive, natural recreation experiences. Disruption by mining activity would substantially degrade one of the most unique recreational resource values in the Dillon Resource Area.

**R-6.8**

**RECOMMENDATION:** Exclude public lands within the area presently defined as the Centennial Mountains Instant Wilderness Study Area from timber harvesting operations.

**RATIONALE:** The Centennial Mountains provide some of the highest quality recreational values in southwestern Montana. In fact, this area offers the best opportunity for solitude and primitive, unconfined recreation experiences on public lands within the Dillon Resource Area. Allowing timber harvesting within this area would significantly impact primitive, unconfined recreational opportunities. Backcountry recreationists utilizing the proposed Continental Divide National Scenic Trail would be adversely affected by timber harvesting operations and scenic impairment. Also much of the watershed is characterized as being in a severe erosion class. (See Wildlife and Watershed URA-3 and 4). Soil surveys indicate much of the area is susceptible to extreme erosion. Road construction in Odell Creek has proven disastrous; slumping is very common. Price and Peet Creeks have been adversely impacted by past timber harvesting activity. Extreme slash and debris buildup has impacted fish production and sport fishing opportunities in these streams. Sediment curtails spawning activity. Excessive disturbance of the watershed would not only drastically reduce the streams' potential as sport fisheries, but also the valuable fisheries of the Red Rock River and Red Rocks Lakes.

Allowing timber harvesting in this area would totally disrupt the scenic values and the objective of providing primitive, unconfined recreation opportunities.

**R-6.2**

**RECOMMENDATION:** Exclude livestock grazing (fencing) on public lands in a manner which prevents further resource damage to the following streams:

Peet Creek
Price Creek
Hell Roaring Creek
Corral Creek
Tom Creek

**RATIONALE:** These streams are being severely impacted by livestock grazing activities. Heavy utilization of riparian vegetation and bank trampling is apparent. As a result, important recreational and scenic qualities are being degraded, and the primitive character of the area is being severely impaired. Increased sediment flow, bank erosion, and lack of vegetation reduces sport fishing opportunities and scenic values.

*(Instructions on reverse)* Form 1600–20 (April 1975)

| | |
|---|---|
| UNITED STATES<br>DEPARTMENT OF THE INTERIOR<br>BUREAU OF LAND MANAGEMENT<br><br>**MANAGEMENT FRAMEWORK PLAN – STEP 1**<br>ACTIVITY OBJECTIVES | Name *(MFP)*<br>DILLON |
| | Activity<br>RECREATION |
| | Objective Number<br>B-R-1 |

**MULTIPLE USE ANALYSIS** (R-6.1, 6.3, 6.4, 6.6, 6.7, M-6.2, R-6.5. 6.8, 6.2)

Management of this area as roadless would preserve unique geologic features and wilderness values. Many of these values are currently being destroyed by uncontrolled vehicle use on lands withdrawn by the Department of Agriculture for experimental sheep grazing. Access to this area by motorized vehicles has been through the Targhee National Forest in Idaho. Main attractions are fishing in Blair Lake and hunting. Much of the hunting and fishing is illegal. A great amount of fishing and hunting in the Centennials occurs as a result of this illegal use. Hunters, primarily, instigate many new roads as the topography and vegetative patterns are conducive to this type of use once access is gained to the top of the range. Severe erosion is the result. A restriction on this type of use was implemented in the fall of 1978 through cooperative efforts of BLM, SEA and F.S. Enforcement has been a problem.

Wildlife (WL-10.1) recommends no roads, no oil and gas drilling, no permanent trails, and no campgrounds to eliminate wildlife disturbance and erosion.

(WL-10.8) recommends this as an ACEC because of critical wildlife values.

(WL-10.5) recommends revocation of the SEA withdrawal, excluding livestock use and managing as roadless to provide for wildlife.

(WL-19.3) recommends relinquishment of the tramroad permit issued to Simplot Co. for access in Odell Creek to eliminate undue erosion in the Odell Creek drainage.

(WL-17.9) recommends fencing to exclude livestock along streams to protect streamside vegetation, reduce bank trampling and reduce stream sedimentation.

(WL-17.10) recommends withdrawing the Centennials from mineral entry to protect against disturbing activities.

(WL-10.3) recommends no livestock grazing on grizzly bear and wolf habitat to minimize conflicts and provide for these species.

(WL-3.10) recommends exchanging with the State of Montana for these tracts to facilitate management and prevent incompatible management practices.

Watershed (W-1.5) recommends excluding livestock to reduce streambank erosion and protect streambanks.

(W-4.7) wants to allow ungulate grazing only on areas having an SSF of less than 61. Areas with greater than 61 SSF are scattered throughout the Resource Area.

(W-5.5) wants to establish part of this area as an ACEC.

(W-9.4) recommends no mining activity on identified paleontological sites.

*(Instructions on reverse)* Form 1600–20 (April 1975)

|  |  |
|---|---|
| UNITED STATES<br>DEPARTMENT OF THE INTERIOR<br>BUREAU OF LAND MANAGEMENT | Name *(MFP)*<br>DILLON |
|  | Activity<br>RECREATION |
| **MANAGEMENT FRAMEWORK PLAN – STEP 1**<br>ACTIVITY OBJECTIVES | Objective Number<br>B-R-1 |

**MULTIPLE USE ANALYSIS** (R-6.1, 6.3, 6.4, 6.6, 6.7, M-6.2, R-6.5. 6.8, 6.2) (Cont.)

Range (RM-6.1) recommends providing management and administrative access to blocks of public land of more than 5000 acres to facilitate grazing management.

(RM-1.2) recommends developing and implementing AMPs to improve range condition.

(RM-1.4) recommends continuing the existing systems on identified allotment plans.

(RM-1.6) wants an annual allocation of 123,361 AUMs of forage from public lands approximately 532 AUMs are presently licensed on public land within the Centennial I.S.A. and 1400 AUMs in the sheep range.

(RM-7.1, 7.2) recommends disposal of custodials to block up for better management.

Annual livestock returns from the Centennial Instant Study area, which includes some public land in allotment 730 outside the I.S.A., is approximately $9,023. This does not include the value of the sheep that graze on the sheep range.

Concerns regarding management and limited grazing value have been identified through the AMP conflict resolution process where reduction in numbers, fencing, if necessary, in allotments 0730 and 0154, exchanges in allotments 0163 and 0737, delay of turnout dates in allotment 0163, exclusion from grazing due to unsuitability and severe erosion hazards in allotments 0737, 0154 and 0901 have been recommended to better manage the area.

(R-6.2, 6.7) 0154-0701 Custodial has been identified as having areas which are unsuitable for grazing and suffer severe erosion hazards. If reduced grazing can be allowed periodically and still protect the stream then the cost of fence construction can be avoided. If erosion cannot be controlled and impacts to areas unsuitable for grazing reduced then we may have no alternative but to fence or exclude grazing entirely.

The isolated tracts on 0737 and 0163 custodials are isolated and difficult, if not impossible, to properly manage. Exchanging them would allow possible blocking up of public lands elsewhere, thus facilitating management. On all allotments the amount of grazing should be reduced to protect identified wildlife and recreation values.

On allotment 0163 Wildlife wants to delay the turnout date and allow grazing during the month of June only to preserve wildlife values which are present.

Minerals URA-3 identified mining claims in section 35, T14S, RIE although to date no record of filing is present in our office.

Bannack Chemical Co. has a phosphate lease on 1408.83 acres in this area which has been subjected to mining.

*(Instructions on reverse)*

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**MANAGEMENT FRAMEWORK PLAN - STEP 1**
ACTIVITY OBJECTIVES

| | |
|---|---|
| Name *(MFP)* | DILLON |
| Activity | RECREATION |
| Objective Number | B-R-1 |

## MULTIPLE USE ANALYSIS (R-6.1, 6.3, 6.4, 6.6, 6.7, M-6.2, R-6.5. 6.8, 6.2) (Cont.)

Recreation (R-6.6): The Science and Education Administration (SEA) of the Department of Agriculture has a withdrawal on 16,650 acres for experimental sheep grazing. Wildlife and watershed problems have been surfaced regarding past use of the area by motorized vehicles which, if allowed to continue, would compound those already identified. Continued control of the withdrawal area by SEA without a signed cooperative management agreement will lead to damage which is detrimental to recreation, wildlife, and other values. SEA is not presently equipped with management authority or the variety of management expertise necessary to properly manage the existing resource values. Their goal is not to manage for these values, but to conduct experiments regarding sheep and sheep grazing. The resources have suffered severe abuses in the past by uncontrolled use of ORVs.

This area contains some of the best wilderness resource values in the Centennial Mountains. Livestock grazing, be it sheep or cattle, is not an incompatible use in roadless/wilderness areas and often is allowed.

The final location for the Continental Divide (R-6.3) trail has not been determined. However, the most logical location would be on the Continental Divide. Every effort will be made to locate the trail on existing trails that meet CDT standards. If the trail is not designated as part of the CDT it would provide outstanding opportunities for hunting, hiking, backpacking, and sightseeing. It would also be an important component of a designated wilderness area, such as the Centennials may be.

For some time, SEA opposed location of the trail on the withdrawn area, but they no longer oppose it.

Trails are compatible with wilderness and can be used as a management tool to control and direct use.

The only apparent conflicting activities with the CDT would be the phosphate mining and (WL-10.1) which states that they want no permanent trail development. Trail location would be coordinated with wildlife to assure no undue disturbance to grizzly bear or wolf habitats.

(R-6.4): Acquisition of the identified state-owned lands would eliminate inholdings within a roadless or wilderness area thereby eliminating potential serious conflicts from differing management directions of another agency. These lands could then be designated and managed in accordance with the entire area. Incompatible activities could also be controlled on these tracts (i.e., timber harvesting, oil and gas leasing, livestock grazing, etc.). (WL-3.10) supports this recommendation.

(R-6.5) recommends withdrawing all public lands from locatable or leaseable minerals within the Centennial Mountains if it is not designated a wilderness area, and denying existing leases when they expire. (WL-17.10) and (WL-10.1) support this recommendation.

*(Instructions on reverse)*

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**MANAGEMENT FRAMEWORK PLAN – STEP 1**
ACTIVITY OBJECTIVES

Name *(MFP)*
DILLON

Activity
RECREATION

Objective Number
B-R-1

**MULTIPLE USE ANALYSIS** (R-6.1, 6.3, 6.4, 6.6, 6.7, M-6.2, R-6.5. 6.8, 6.2) (Cont.)

Minerals (M-1.4) recommends withdrawal of the primitive area from location of mining claims stating that it is a very low potential area. Although two unpatented mining claims are said to exist in section 35, T14S, RIE, mineral activity and interest have been virtually nonexistent in the Centennials with the exception of the phosphate mine.

Parts of the area have been leased for oil and gas with no surface occupancy and other areas have leases pending. The area is open for leasing with no surface occupancy (see Travel Plan). Exploration will be allowed by foot or horseback. Mining activities would be incompatible with the roadless or wilderness management direction for this area.

(R-6.7) recommends excluding grazing from the Sheep Mountain, Tom Creek, and Davis Custodial tracts. Steep terrain, timber, unsuitability for grazing, and important scenic and recreational values are the factors precipitating this recommendation. Steep terrain suffers sidehilling by livestock which creates patterns of parallel trails.

Sheep Mountain is currently unleased and should remain so and ascertained that livestock grazing does not occur. (R-6.2) recommends excluding livestock grazing on public lands along Peet Creek, Price Creek, Hell Roaring Creek, Corral Creek and Tom Creek to prevent further resource damage to those streams. Heavy utilization of riparian vegetation and stream bank trampling degrades important recreational and scenic qualities as well as contributing to degradation of sport fishing opportunities, sediment flow and bank erosion.

Range management states that Tom Creek is basically unsuitable for any livestock grazing and all livestock grazing should be discontinued. This may require fencing in certain areas. It is also unsuitable for sheep grazing.

Recreation, Watershed, and Wildlife recommend no grazing in Sections 25 and 26 - Hell Roaring Creek.

Recreation (R-6.8) recommends excluding public lands within the Centennial Mountains Instant Wilderness Study Area from timber harvesting operations. Forestry identified a total of 26,140 acres of productive forest land in the Centennials. Of this, 1,907 acres east of the Odell Creek watershed are identified as inoperable due to steep terrain, etc. Odell Creek drainage consists of approximately 6,000 acres of forested land (see FP-1.1). Elimination of timber harvest in this area would leave about 18,240 acres for timber production in the Centennials.

Minerals (M-6.2) recommends protecting the north-facing Centennial Range fault escarpment. It is a geologic feature of considerable scientific significance. We are mandated by the Antiquities Act of 1906, and the BLM Manual (1603.12 C 2 c-3-4) to preserve primitive and natural values.

The Centennial Mountains contain many outstanding and unique qualities for recreation and wildlife. Activities which are usually responsible for impairment of these qualities and possible

*(Instructions on reverse)*

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**MANAGEMENT FRAMEWORK PLAN – STEP 1**
ACTIVITY OBJECTIVES

| | |
|---|---|
| Name *(MFP)*<br>DILLON | |
| Activity<br>RECREATION | |
| Objective Number<br>B-R-1 | |

## MULTIPLE USE ANALYSIS (R-6.1, 6.3, 6.4, 6.6, 6.7, M-6.2, R-6.5. 6.8, 6.2) (Cont.)

in the Centennials are: road construction associated with timber harvesting, mining, overgrazing, off-road vehicle use, etc. These qualities have been recognized, as evidenced by the fact that it was designated a primitive area, qualifying it automatically as an Instant Wilderness Study Area in compliance with FLPMA. Any actions occurring in the Centennials must be in compliance with Interim Management Policy and Guidelines for Wilderness Study Areas which briefly state that activities occurring prior to the passage of FLPMA can continue and new starts can occur, so long as they are conducted in a manner to not impair a WSA's wilderness suitability.

A decision has not been made as to whether or not the SEA withdrawal area should be included in the WSA. This determination will be made at the Washington Office level. Until a decision is made, these lands are not automatically included for study and may or may not be included, unless the withdrawal is revoked. Attempts at developing a signed cooperative management agreement with SEA for the withdrawal area have not materialized due to SEA's reluctance to sign. It has been sent to the Washington level for resolution. Continuation of the withdrawal as it now exists, segregates some of the highest quality recreation (wilderness) areas from study and possible designation. This also impairs the continuity of the entire Centennials as a management unit.

Continuation of sheep grazing is not inconsistent in a wilderness area, nor would it be in a roadless area, and can be allowed. Therefore, if the withdrawal were revoked, it would not preclude continued experimental sheep grazing.

## MULTIPLE USE RECOMMENDATION

R-6.1 — manage the area from Matsingale Creek to the east end of the Centennial Mountains as roadless (see B-MFP2-4 overlay).

Accept recommendations R-6.3, 6.4, 6.6 and M-6.2, as written.

Modify R-6.5 to allow no surface occupancy of leaseable minerals and to withdraw from locatable minerals that area located east of Matsingale Creek (see B-MFP2-3 overlay).

Modify R-6.8 to exclude timber harvesting operations from Matsingale Creek to the east end of the Centennial Range (see B-MFP2-1 overlay).

Modify R-6.2 and 6.7 to allow grazing at a reduced rate, shortened schedule, or apply specified grazing treatments. If these actions do not solve the problems, exclude grazing entirely.

*(Instructions on reverse)*

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**MANAGEMENT FRAMEWORK PLAN – STEP 1**
ACTIVITY OBJECTIVES

| | |
|---|---|
| Name *(MFP)*<br>DILLON | |
| Activity<br>RECREATION | |
| Objective Number<br>B-R-1 | |

## REASONS

It has been determined that the phosphate lease cannot be tampered with, and that leasing with no surface occupancy (underground mining) be allowed on the entire area. We should cooperate with Simplot Co. to encourage them to relinquish their tramroad permit in Odell Creek and haul ore south through the Targhee National Forest.

Essentially, all of the SEA withdrawal area plus about 200+ acres in the Taylor Mountain vicinity are under a phosphate reserve. According to MSO, lands under a phosphate reserve that are not under another withdrawal can be withdrawn from locatables. The Centennials have many outstanding features worthy of protection by wilderness designation or roadless management. Range identified many areas which are unsuitable for grazing and also made a recommendation to exchange all of the Centennials, due to the low grazing values.

Although grazing is not incompatible in wilderness areas — overgrazing is, and so is unnecessary fencing, especially along streams. Therefore, if wildlife and recreation values can be protected by reducing the numbers of grazing animals or shortening the grazing period, the benefits will be twofold, i.e., (1) the values will be protected and (2) an intrusion won't be required to do it.

Low mineral values indicate low potential for hardrock mining.

High resource values and concerns prompted the recommendation to exclude timber harvest from Matsingale Creek to the east end of the Centennial Range (see FP-1.10)

Severe erosion problems and degradation of high resource values due to SEA's unwillingness and inability to manage ORV use on the withdrawal area have occurred. Attempts at developing a signed cooperative management plan with SEA have not materialized, creating a no control/ management situation for that area.

The CDT, if located on the Continental Divide, would utilize existing trails to the extent possible, creating little impact on wildlife values, while providing outstanding hiking, backpacking, viewing, etc., opportunities.

Acquisition of the State-owned lands would allow management and protection of them in accordance with overall management direction of the area. The State has indicated a desire to exchange these tracts for some of our holdings elsewhere.

Management of the area leased to Bannock Chemical Company is recommended for the continued production of phosphate (see M-2.7).

## SUPPORT

Lands, Minerals, Range

*(Instructions on reverse)*

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**MANAGEMENT FRAMEWORK PLAN – STEP 1**
ACTIVITY OBJECTIVES

| | |
|---|---|
| Name *(MFP)* | DILLON |
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| Objective Number | B-R-1 |

## ALTERNATIVES

1. Manage the entire Centennial Range for primitive and unconfined recreation.
2. Allow for development of the entire area.
3. Do not revoke the SEA withdrawal.
4. Discourage location of the CDT on public lands.
5. Exclude all grazing.
6. Do not withdraw from mineral entry.

DECISION
Accepted as Final Decision
by District Manager 9/10/79

*(Instructions on reverse)*

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# APPENDIX E
# CHARACTERISTICS OF SOILS IN THE CENTENNIAL STUDY AREA

CHARACTERISTICS OF SOILS IN THE CENTENNIAL STUDY AREA

| Parent Material | Representative Soil Families | Acres (Percent) | Percent of Slope | Soil Depth in Inches | Surface Soil Texture | Subsurface Soil Texture | Available Water Capacity |
|---|---|---|---|---|---|---|---|
| Tertiary Volcanics | Typic cryochrepts, loamy skeletal, mixed<br>Typic cryoborolls, loamy skeletal, mixed<br>Typic cryoboralfs, fine loamy, mixed<br>Argic pachic cryoborolls, fine loamy, mixed | 23,800 (33) | 20-65 | 30-60 | Loam, gravelly loams | Gravelly loam | Low-Moderate |
| Cretaceous, Tertiary Sediments | Typic cryoboralfs, fine, montmorillonitic<br>Mollic cryoboralfs, fine, montmorillonitic<br>Argic cryoborolls, fine, montmorillonitic | 23,585 (32) | 5-55 | 30-60 | Loam, clay loams | Clay loam, clays | High |
| Limestone | Typic cryochrepts, loamy skeletal, mixed<br>Mollic cryoboralfs, loamy skeletal, mixed | 9,300 (13) | 20-60 | 20-60 | Loam, gravelly loams | Gravelly loam, cobbly loams | Low |
| Sandstone, Quartzites | Typic cryoborolls, loamy skeletal, mixed<br>Typic cryochrepts, loamy skeletal, mixed | 7,900 (11) | 20-60 | 20-60 | Loam, gravelly loams | Gravelly loams, cobbly loams | Low-Moderate |
| Quanterary Deposits | Mollic cryoboralfs, fine loamy, mixed<br>Typic cryochrepts, loamy skeletal, mixed<br>Typic cryoborolls, fine montmorillonitic | 4,700 (6) | 20-50 | 20-60 | Gravelly loam, clay loams | Gravelly loam, clay | Low-High |
| Precambrian Metamorphics | Typic cryochrepts, loamy skeletal, mixed<br>Typic cryoborolls, loamy skeletal, mixed | 3,600 (5) | 30-60 | 20-30 | Loam, gravelly loam | Gravelly loam, cobbly loams | Low |

*These soil characteristics and interpretations represent a majority of the soil families within each parent material type. However, due to microclimate differences within each parent material type, characteristics and interpretations may change drastically from this brief summation. For more detailed soils information refer to the Dillon Area Soil Survey and the Targhee National Forest Centennial Mountains Planning Unit Land Type Descriptions.

| Parent Material | Water Infiltration | Permeability | Drainage | Slump Hazard | Erosion | Compaction Hazard | Revegetation Potential | Comments/Concerns |
|---|---|---|---|---|---|---|---|---|
| Tertiary Volcanics | Moderately rapid - Rapid | Rapid - Moderately rapid | Excessively drained - Well drained | Low-Moderate | Moderate - Severe | Low | Low - Moderate | Usually coarse textured and somewhat droughty but exceptions do occur. Rock outcrops, talus slopes and steep scarpland is prevalent on the extreme east end. |
| Cretaceous, Tertiary Sediments | Moderate - Slow | Slow | Somewhat poorly drained - Moderately well drained | High | Moderate - Severe | Moderate - High | Moderate - High | Large and small slumps and earth flows are common on this unit. Timber harvest and road construction must be performed with care to prevent mass soil movement. |
| Limestone | Moderately rapid - Rapid | Moderately rapid - Rapid | Excessively drained - Moderately well drained | Low | Moderate - Severe | Low | Low - Moderate | Rock outcrops, talus slopes, and rocky ridges are common. Often calcareous to the surface. |
| Sandstone, Quartzites | Moderate - Moderately rapid | Moderate | Well drained | Low | Moderate - Severe | Low | Low - Moderate | Rock outcrops are common. Usually under herbaceous vegetation. However, where slopes are gentler and the soils are finer textured, some timber stands are supported due to more favorable moisture conditions. |
| Quanterary Deposits | Slow - Rapid | Slow - Rapid | Somewhat poorly drained - Well drained | High - Very high | Moderate - Severe | Low - High | Low - High | Historic sites of land slides and earth flows. Timber harvest and road construction must be performed with care to prevent mass soil movement. |
| Precambrian Metamorphics | Moderately rapid - Rapid | Moderately rapid - Rapid | Excessively drained - Well drained | Low | Moderate - Severe | Low | Low - Moderate | Rock outcrops are common. Occurs primarily on and around Nemesis Mountain. |

# APPENDIX F
# ECOSYSTEM REPRESENTATION

Table F-1 shows the number of acres of each ecosystem found in the Centennial Study Area.

TABLE F-1

ECOSYSTEMS FOUND IN THE CENTENNIAL STUDY AREA

| Ecosystem | Number of Acres in the Centennial Study Area |
|---|---|
| Douglas-fir Forest (011) | 8,796 |
| Western Spruce- Fir Forest (014) | 12,518 |
| Alpine Meadows and Barren (045) | 51,571 |

The following is a brief description of each ecosystem represented in the areas under study. These ecosystems are from *Bailey-Kuchler Ecosystem Classification System* (Kuchler 1964 and USD, FS 1976).

## DOUGLAS-FIR FOREST *(Pseudotsuga)*

Physiognomy. Medium dense forest of medium tall needleleaf evergreen trees.

Dominants. Douglas-fir *(Pseudotsuga menziesii).*

Other Components. *Abies concolor, Larix occidentalis, Physocarpus malvaceous, Picea pungens, P. glauca* (northern part), *Pinus contorta, P. ponderosa* (lower elevations), *Populus tremuloides.*

Occurrence. Northern Rocky Mountains and Washington.

## WESTERN SPRUCE, FIR FOREST *(Picea, Abies)*

Physiognomy. Dense to open forests of low to medium tall needleleaf evergreen trees; open forests with a synusia of shrubs and herbaceous plants.

Dominants. Subalpine fir *(Abies lasiocarpa)*; Englemann spruce *(Picea engelmannii).*

Other Components. *Arctostaphylos uva ursi, Arnica cordifolia, Calamogrostis canadensis, Carex* spp., *Larix lyallii, Menziesia ferruginea, Pinus albicaulis* (northern part), *P. contorta, Populus tremuloides, Pseudotsuga menziesii* (lower elevations), *Shepherdia canadensis, Symphoricarpos albus, Tsuga mertensiana* (western part), *Vaccinium* spp., *Xerophyllum tenax.*

Occurrence. High altitudes of northern Rocky Mountains and Washington.

## ALPINE MEADOWS AND BARREN *(Agrostis, Carex, Festuca, Poa)*

Physiognomy. Usually short grasses and sedges, dense to very open with extensive barren areas; many forbs.

Dominants. Bentgrass *(Agrostis* spp.); sedges *(Carex* spp.); hairgrass *(Deschampsia caespitosa)*; fescue *(Festuca viridula)*; woodrush *(Luzula spicata)*; mountain timothy *(Phleum alpinum)*; bluegrass *(Poa* spp.); spike trisetum *(Trisetum spicatum).*

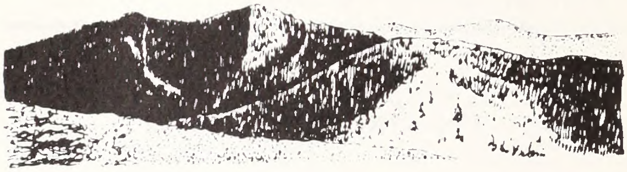
Other Components. *Achillea* spp., *Antennaria* spp., *Aquilegia* spp., *Arenaria* spp., *Castilleja* spp., *Draba* spp., *Erigeron compositus,* lichen spp., *Oxyria digyna, Pentstemon fruticosus, Phacelia* spp., *Phlox caespitosa, Polemonium* spp., *Polygonum* spp., *Potentilla diversifolia, Potentilla* spp., *Salix nivalis, Salix* spp., *Saxifraga* spp., *Selaginella* spp., *Sibbaldia procumbens, Sieversia turbinata, Solidago* spp.

Occurrence. Rocky Mountains, Cascade Range, Sierra Nevada.

# APPENDIX G
# MONTANA WILDERNESS STATUS SUMMARIES

The following summary tables list the current wilderness status for Montana. The Centennial Study is the last wilderness study for the BLM in Montana.

Table G-1 lists the wilderness recommendations that will be transmitted with this wilderness study. Table G-2 lists BLM wilderness study areas in Montana where the studies are complete and awaiting Presidential recommendations. Table G-3 lists the present Congressionally designated wilderness areas in Montana. Table G-4 lists wilderness recommendations pending before Congress for all agencies within Montana. Table G-5 lists areas still under wilderness study by other agencies within Montana.



## TABLE G-1
## WILDERNESS RECOMMENDATIONS TRANSMITTED BY THIS REPORT

| BLM District | Resource Area | Report Name | Unit Name | Total Acreage | Acres Recommended Suitable | Acres Recommended Nonsuitable | Other Agency Additions |
|---|---|---|---|---|---|---|---|
| Butte | Dillon | Centennial Mountains Wilderness Environmental Impact Statement | Centennial Mountains | 72,885 | 26,248[1] | 46,637[2] | 4,474 |

[1] Includes 4,474 acres managed by Beaverhead National Forest

[2] Includes 42,040 acres managed by Targhee National Forest

## TABLE G-2

## COMPLETED MONTANA BLM WILDERNESS STUDIES AWAITING PRESIDENTIAL RECOMMENDATIONS

| District | Resource Area | Plan Name | Unit Name | Unit Number | Total Acreage | Preliminary Recommendations (State Director) |
|---|---|---|---|---|---|---|
| Butte | Headwaters | Humbug Spires ISA Suitability Report/EIS | Humbug Spires | — | 11,175 | 8,791 ac. suitable<br>2,384 ac. nonsuitable |
| Butte | Headwaters | Headwaters RA Resource Management Plan/EIS | Blind Horse Creek | MT-075-102 | 4,927 | 4,927 ac. nonsuitable |
| Butte | Headwaters | Headwaters RA Resource Management Plan/EIS | Chute Mtn. | MT-075-105 | 3,205 | 3,205 ac. nonsuitable |
| Butte | Headwaters | Headwaters RA Resource Management Plan/EIS | Deep Cr./Battle Cr. | MT-075-106 | 3,086 | 3,086 ac. nonsuitable |
| Butte | Headwaters | Wilderness Planning Amemdment/EIS for the Headwaters RA | Black Sage | MT-075-115 | 5,926 | 5,926 ac. nonsuitable |
| Butte | Headwaters | Wilderness Planning Amendment/EIS for the Headwaters RA | Yellowstone River Island | MT-075-133 | 53 | 53 ac. nonsuitable |
| Miles City | Billings | Billings RA Resource Management Plan/EIS | Twin Coulee | MT-067-212 | 6,870 | 6,870 ac. nonsuitable |
| Miles City | Billings | Billings RA Resource Management Plan/EIS | Pryor Mountain | MT-067-206 | 16,927 | 16,927 ac. suitable |
| Miles City | Billings | Billings RA Resource Management Plan/EIS | Burnt Timber Canyon | MT-067-205 | 3,955 | 3,430 ac. suitable<br>525 ac. nonsuitable |
| Miles City | Billings | Billings RA Resource Management Plan/EIS | Big Horn Tack-on | MT-067-207 | 4,550 | 2,550 ac. suitable<br>2,000 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | Ruby Mountains | MT-076-001 | 26,611 | 15,615 ac. suitable<br>10,996 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | Blacktail Mtns. | MT-076-002 | 17,479 | 10,986 ac. suitable<br>6,493 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | Farlin Creek | MT-076-034 | 1,139 | 610 ac. suitable<br>529 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | E. Fork Blacktail Deer Cr. | MT-076-007 | 6,180 | 6,180 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | Hidden Pasture Creek | MT-076-022 | 15,475 | 15,475 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | Bell Limekiln Canyons | MT-076-026 | 9,588 | 9,588 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | Henneberry Ridge | MT-076-028 | 9,756 | 9,756 ac. nonsuitable |
| Butte | Dillon | Wilderness Planning Amendment/EIS for the Dillon RA | Axolotl Lakes | MT-076-069 | 6,578 | 6,578 ac. nonsuitable |

## TABLE G-2 (Continued)

## COMPLETED MONTANA BLM WILDERNESS STUDIES AWAITING PRESIDENTIAL RECOMMENDATIONS

| District | Resource Area | Plan Name | Unit Name | Unit Number | Total Acreage | Preliminary Recommendations (State Director) |
|---|---|---|---|---|---|---|
| Lewistown | Phillips | Missouri Breaks Wilderness Suitability Study/EIS | Cow Creek | MT-066-256 | 34,050 | 21,590 ac. suitable<br>12,460 ac. nonsuitable |
| Lewistown | Phillips | Missouri Breaks Wilderness Suitability Study/EIS | Antelope Creek | MT-066-266 | 9,600 | 9,600 ac. suitable |
| Lewistown | Valley | Missouri Breaks Wilderness Suitability Study/EIS | Burnt Lodge | MT-065-278 | 13,730 | 13,730 ac. suitable |
| Miles City | Big Dry | Missouri Breaks Wilderness Suitability Study/EIS | Seven Blackfoot | MT-024-657 | 20,250 | 5,710 ac. suitable<br>14,540 ac. nonsuitable |
| Miles City | Powder River | Missouri Breaks Wilderness Suitability Study/EIS | Terry Badlands | MT-024-684 | 43,165 | 29,020 ac. suitable<br>14,145 ac. nonsuitable |
| Lewistown | Judith | Missouri Breaks Wilderness Suitability Study/EIS | Woodhawk | MT-068-246 | 8,100 | 8,100 ac. nonsuitable |
| Lewistown | Havre | Missouri Breaks Wilderness Suitability Study/EIS | Ervin Ridge | MT-066-253 | 10,200 | 10,200 ac. nonsuitable |
| Miles City | Big Dry | Missouri Breaks Wilderness Suitability Study/EIS | Bridge Coulee | MT-024-675 | 5,900 | 5,900 ac. nonsuitable |
| Miles City | Big Dry | Missouri Breaks Wilderness Suitability Study/EIS | Musselshell Breaks | MT-024-677 | 8,650 | 8,650 ac. nonsuitable |
| Lewistown | Valley | Bitter Creek Wilderness Suitability Study/EIS | Bitter Creek | MT-064-356 | 59,660 | 59,660 ac. nonsuitable |
| Miles City | Powder River | Powder River Resource Management Plan/EIS | Zook Creek | MT-027-701 | 8,438 | 8,438 ac. nonsuitable |
| Miles City | Powder River | Powder River Resource Management Plan/EIS | Buffalo Creek | MT-027-702 | 5,650 | 5,650 ac. nonsuitable |
| | TOTAL BLM | | NUMBER OF AREAS 30 | | 380,875 ACRES | 138,559 ACRES SUITABLE |

## TABLE G-3
## MONTANA STATUTORY WILDERNESS (ALL AGENCIES)

| Agency | County(s) | Unit Name | Unit Number | Unit Acreage | |
|---|---|---|---|---|---|
| BLM[1] | Madison | Bear Trap Canyon | — | 6,000 | |
| | TOTAL BLM | NUMBER OF AREAS 1 | | 6,000 | ACRES |
| FS | Carbon, Stillwater, Sweet Grass, Park | Absaroka-Beartooth | NF 106 | 920,377 | |
| FS | Granite, Ravalli, Deer Lodge, Beaverhead | Anaconda-Pintlar | NF 003 | 157,874 | |
| FS | Flathead, Teton, Lewis & Clark, Powell | Bob Marshall | NF 005 | 1,009,356 | |
| FS | Lincoln, Sanders | Cabinets | NF 010 | 94,272 | |
| FS | Lewis & Clark | Gates of the Mtns. | NF 027 | 28,562 | |
| FS | Flathead Lake | Great Bear | NF 107 | 286,700 | |
| FS | Missoula | Mission Mtns. | NF 050 | 73,877 | |
| FS | Missoula | Rattlesnake | 1-801 | 20,119 | |
| FS | Lewis & Clark, Powell | Scapegoat | NF 073 | 239,296 | |
| FS | Ravalli | Selway-Bitterroot | NF 074 | 248,893 | |
| FS | Granite | Welcome Creek | NF 103 | 28,135 | |
| FS[1] | Madison | Lee Metcalf | — | 226,133 | |
| | TOTAL FS | NUMBER OF AREAS 12 | | 3,333,594 | ACRES |
| FWS | Beaverhead | Red Rock Lakes | WR-036 | 32,350 | |
| FWS | Sheridan | Medicine Lake National Wildlife Refuge | WR-027 | 11,800 | |
| FWS | Phillips | UL Bend National Wildlife Refuge | WR-047 | 20,847 | |
| | TOTAL FWS | NUMBER OF AREAS 3 | | 64,997 | ACRES |
| NPS | N/A | N/A | N/A | N/A | |
| State Administered | N/A | N/A | N/A | N/A | |

[1] The 6,000-acre BLM-managed Bear Trap Canyon is one component of the 259,000-acre Lee Metcalf Wilderness. The other units in the wilderness are managed by the Forest Service.

## TABLE G-4

## MONTANA WILDERNESS RECOMMENDATIONS PENDING BEFORE CONGRESS (ALL AGENCIES)

| Agency | County(s) | Unit Name | Unit Number | Unit Acreage |
|---|---|---|---|---|
| FWS | Garfield | East Seven Blackfoot | FW-923-1 | 12,184 |
| FWS | Phillips | Mickey Butte | FW-923-2 | 17,413 |
| FWS | Phillips, Valley | Burnt Lodge | FW-923-3 | 22,976 |
| FWS | Garfield | Billy Creek | FW-923-4 | 11,556 |
| FWS | Garfield | West Seven Blackfoot | FW-923-5 | 7,096 |
| FWS | Phillips | Antelope Creek | FW-923-6 | 5,382 |
| FWS | Garfield | West Mill Creek | FW-923-7 | 11,896 |
| FWS | Petroleum | Fort Musselshell | FW-923-8 | 8,303 |
| FWS | Garfield | Sheep Creek | FW-923-9 | 12,424 |
| FWS | Phillips | West Beauchamp | FW-923-10 | 6,736 |
| FWS | Garfield | Wagon Coulee | FW-923-11 | 10,528 |
| FWS | Petroleum | Alkali Creek | FW-923-12 | 6,592 |
| FWS | Petroleum | Crooked Creek | FW-923-13 | 6,842 |
| FWS | Garfield | East Hell Creek | FW-923-14 | 15,984 |
| FWS | Garfield | East Beauchamp | FW-923-15 | 5,568 |
|  | TOTAL FWS | NUMBER OF AREAS | 15 | 161,480 ACRES |
| NPS | Flathead, Glacier | Glacier | NP-915 | 917,600 |
| NPS | Park, Gallatin | Yellowstone | NP-928 | 167,060 |
|  | TOTAL NPS | NUMBER OF AREAS | 2 | 1,084,660 ACRES |

## TABLE G-5

## OTHER AGENCY AREAS IN MONTANA UNDER WILDERNESS STUDY OR WITH PRELIMINARY RECOMMENDATIONS

| Agency | County(s) | Unit Name | Unit Number | Net Unit Acreage | Acres Recommended |
|---|---|---|---|---|---|
| FS | Ravalli | Tolan Creek | X1070 | 7,088 | — |
| FS | Ravalli | Sleeping Child | X1074 | 21,423 | — |
| FS | Ravalli | Swift Creek | 1065 | 744 | — |
| FS | Ravalli | Needle Creek | 1066 | 1,085 | — |
| FS | Ravalli | Selway-Bitterroot | 1067 | 109,711 | 48,305 |
| FS | Ravalli, Granite | Stony Mtn. | 1808 | 103,266 | — |
| FS | Ravalli | Blue Joint | 1941 | 65,370 | 28,500 |
| FS | Ravalli | Allan Mtn. | 1946 | 102,286 | — |
| FS | Lake | Swan River Island | LIFAA | 550 | — |
| FS | Flathead | Benchmark | X1126 | 6,490 | — |
| FS | Flathead | Coal Ridge | X1127 | 16,480 | — |
| FS | Flathead | Deadhorse | X1128 | 23,550 | — |
| FS | Flathead | Standard Peak | X1129 | 7,770 | — |
| FS | Flathead | Mt. Hefty | 1481 | 13,720 | — |
| FS | Flathead, Lincoln | Tuchuck | 1482 | 19,820 | — |
| FS | Flathead, Lincoln | Mt. Thompson Seton | TS483 | 71,750 | — |
| FS | Lake, Missoula | Mission Additions | 1500-1506 | 2,340 | — |
| FS | Flathead | Lebeau Creek | L1507 | 6,210 | — |

## TABLE G-5(Continued)
## OTHER AGENCY AREAS IN MONTANA UNDER WILDERNESS STUDY OR WITH PRELIMINARY RECOMMNEDATIONS

| Agency | County(s) | Unit Name | Unit Number | Net Unit Acreage | Acres Recommended |
|---|---|---|---|---|---|
| FS | Flathead, Lake, Missoula, Powell, Lewis & Clark, Teton, Pondera, Glacier | Bear-Marshall-Scapegoat-Swan | 1485 | 865,178 | 164,945 |
| FS | Lincoln | Zulu Creek | X166 | 6,400 | — |
| FS | Lincoln | Marston Face | X172 | 6,000 | — |
| FS | Lincoln | Mt. Willard-Lake Estelle | 1173 | 256 | — |
| FS | Lincoln | Gold Hill (West) | X176 | 10,200 | — |
| FS | Lincoln | Flagstaff Mt. | X690 | 9,500 | — |
| FS | Lincoln | Roberts Mt. | X691 | 2,700 | — |
| FS | Sanders | West Fork Elk Cr. | X692 | 819 | — |
| FS | Sanders | Rock Creek | X693 | 400 | — |
| FS | Lincoln | Buckhorn Ridge | 1661 | 27,000 | — |
| FS | Lincoln | Scotchman Peaks | 1662 | 64,280 | 36,380 |
| FS | Lincoln | Northwest Peaks | 1663 | 19,100 | — |
| FS | Sanders | Trout Creek | 1664 | 31,400 | — |
| FS | Sanders | Cataract | 1665 | 27,600 | — |
| FS | Lincoln | Grizzly Peak | 1667 | 6,000 | — |
| FS | Lincoln | Gold Hill | 1668 | 10,700 | — |
| FS | Sanders, Lincoln | Cabinet Face West | 1670 | 10,900 | 8,000 |
| FS | Sanders, Lincoln | Cabinet Face East | 1671 | 50,400 | 20,500 |
| FS | Sanders | Berray Mtn. | 1672 | 8,300 | — |
| FS | Sanders | Government Mtn. | 1673 | 8,600 | — |
| FS | Sanders | Lone Cliff Smeads | 1674 | 6,600 | — |
| FS | Sanders | McNeeley | 1675 | 7,700 | — |
| FS | Sanders | McKay Creek | 1676 | 13,500 | 6,700 |
| FS | Sanders | Galena | 1677 | 15,500 | — |
| FS | Sanders | East Fork Elk Cr. | 1678 | 5,000 | — |
| FS | Sanders | Chippewa Creek | 1682 | 2,300 | 400 |
| FS | Lincoln | Ten Lakes & Contiguous Areas | 1683-1683A | 41,100 | 31,800 |
| FS | Lincoln | Roderick | 1684 | 24,800 | — |
| FS | Granite | Emerine | X1423 | 16,161 | — |
| FS | Granite | Sapphires | 1421 | 116,530 | — |
| FS | Granite | Silver King | 1424 | 65,767 | — |
| FS | Granite | North Carp | 1425 | 12,042 | — |
| FS | Granite | Upper East Fork | 1426 | 7,361 | — |
| FS | Deer Lodge | Storm Lake | 1427 | 7,481 | 5,918 |
| FS | Granite, Powell | Flint Range-Dolus Lake | 1428-1429 | 60,297 | — |
| FS | Silver Bow | Basin Creek | 1430 | 9,888 | — |
| FS | Silver Bow, Madison | Highlands | 1431 | 20,921 | — |
| FS | Jefferson, Silver Bow | O'Neil Creek | 1432 | 6,511 | — |
| FS | Jefferson | Whitetail-Haystack | 1433-1434 | 71,249 | — |
| FS | Granite | Fred Burr | 1435 | 6,643 | — |
| FS | Sanders | McGregor-Thompson | LILAQ | 27,850 | — |
| FS | Missoula | Petty Mtn. | X1202 | 16,980 | — |
| FS | Missoula | Deep Creek | X1814 | 7,970 | — |
| FS | Missoula | Rattlesnake | X1204 | 2,700 | — |
| FS | Missoula | Reservation Divide | X1205 | 16,300 | — |
| FS | Sanders | Baldy Mtn. | X1209 | 6,680 | — |
| FS | Granite, Missoula | Ward Eagle | X1220 | 8,570 | — |
| FS | Sanders | Teepee-Spring Cr. | X1786 | 14,890 | — |
| FS | Sanders | Evans Gulch | X1811 | 8,830 | — |
| FS | Sanders | Clear Creek | X1812 | 5,470 | — |
| FS | Sanders | Maple Peak | 1141 | 7,860 | — |
| FS | Mineral | Stevens Peak | 1142 | 600 | — |
| FS | Mineral | Wonderful Peak | 1152 | 1,600 | — |
| FS | Mineral, Missoula | Hoodoo | 1301 | 98,500 | 81,500 |

## TABLE G-5(Continued)
## OTHER AGENCY AREAS IN MONTANA UNDER WILDERNESS STUDY OR WITH PRELIMINARY RECOMMNEDATIONS

| Agency | County(s) | Unit Name | Unit Number | Net Unit Acreage | Acres Recommended |
|---|---|---|---|---|---|
| FS | Mineral | Meadow Cr-Upper N. Fork | 1302 | 7,200 | — |
| FS | Missoula | Marshall Peak | 1781 | 9,400 | — |
| FS | Sanders | Cube-Iron-Silcox | 1784 | 38,100 | — |
| FS | Sanders | Sundance Ridge | 1785 | 7,220 | — |
| FS | Sanders, Mineral | Mount Bushnell | 1790 | 43,070 | — |
| FS | Sanders, Mineral | Cherry Peak | 1791 | 39,640 | — |
| FS | Mineral | Gilt Edge-Silver Creek | 1792 | 11,200 | — |
| FS | Sanders | Patricks Knob-N. Cutoff | 1794 | 17,200 | — |
| FS | Sanders | South Siegel-S. Cutoff | 1795 | 14,800 | — |
| FS | Sanders | North Siegel | 1796 | 10,000 | — |
| FS | Mineral | Marble Point | 1798 | 13,170 | — |
| FS | Mineral | Sheep Mtn.-St. Line | 1799 | 40,500 | — |
| FS | Missoula | Stark Mtn. | 1800 | 14,140 | — |
| FS | Missoula | Burdette | 1803 | 16,380 | — |
| FS | Missoula, Ravalli | Lolo Creek | 1805 | 15,247 | — |
| FS | Granite | Welcome Creek | 1806 | 1,100 | — |
| FS | Granite | Quigg | 1807 | 81,985 | 60,830 |
| FS | Missoula | Garden Point | 1809 | 6,500 | — |
| FS | Park, Sweetgrass, Stillwater | North Absaroka | 1371 | 181,759 | — |
| FS | Meagher, Park | Crazy Mtns. | 1541 | 87,100 | — |
| FS | Gallatin | Bridger Mtns. | 1543 | 45,402 | — |
| FS | Park | Republic Mtn. | 1545 | 700 | 500 |
| FS | Park | Chico Peak | 1547 | 10,855 | — |
| FS | Gallatin | Gallatin Divide-Hyalite | 1548 | 158,109 | — |
| FS | Gallatin | Dry Canyon | 1550 | 2,160 | — |
| FS | Park | Beartooth | 1912 | 5,900 | — |
| FS | Park | Reef | 1914 | 2,200 | — |
| FS | Park | Lionhead | 1963 | 32,780 | 22,800 |
| FS | Lewiw & Clark, Broadwater | Hedges Mtn. & Middleman Mtn. | X1613 & 1612 | 32,865 | — |
| FS | Lewis & Clark, Broadwater | Hellgate Gulch | X1614 | 18,196 | — |
| FS | Lewis & Clark, Broadwater, Meagher | Cayuse Mtn. | X1615 | 18,550 | — |
| FS | Lewis & Clark, Powell | Lincoln Gulch | 1601 | 8,125 | — |
| FS | Lewis & Clark | Anaconda Hill | 1602 | 17,461 | — |
| FS | Lewis & Clark | Specimen Creek | 1603 | 11,281 | — |
| FS | Lewis & Clark | Crater Mtn. | 1604 | 8,991 | — |
| FS | Lewis & Clark, Powell | Ogden Mtn. | 1605 | 12,140 | — |
| FS | Lewis & Clark, Powell | Nevada Mtn. | 1606 | 49,530 | — |
| FS | Lewis & Clark, Powell | Jericho Mtn. | 1607 | 8,968 | — |
| FS | Lewis & Clark | Lazyman Gulch | 1608 | 11,928 | — |
| FS | Powell, Jefferson | Electric Peak | 1609 | 46,497 | — |
| FS | Lewis & Clark | Gates of the Mtns. | 1610 | 11,717 | 9,974 |
| FS | Lewis & Clark | Devils Tower | 1611 | 7,018 | — |
| FS | Broadwater, Meagher | Camas Creek | 1616 | 28,286 | — |
| FS | Broadwater, Meagher | Mount Baldy | 1617 | 16,114 | — |
| FS | Broadwater, Meagher | Grassy Mtn. | 1618 | 6,444 | — |
| FS | Meagher | Ellis Canyon | 1619 | 8,636 | — |
| FS | Broadwater, Meagher | Irish Gulch | 1621 | 7,330 | — |
| FS | Carbon | Lost Water Canyon | 1362 | 9,800 | 9,800 |
| FS | Carbon | Red Lodge Creek-Hellroaring | 1363 | 14,760 | — |
| FS | Carbon | Burnt Mtn. | 1364 | 9,320 | — |
| FS | Carbon, Stillwater | Fishtail-Saddleback Mtn. | 1366 | 16,560 | — |
| FS | Stillwater-Sweetgrass | West of Woodbine | 1369 | 2,000 | — |
| FS | Carbon | Black Butte | 1368 | 880 | — |
| FS | Powder River | Cook Mtn. | 1370 | 11,700 | — |

## TABLE G-5(Continued)
## OTHER AGENCY AREAS IN MONTANA UNDER WILDERNESS STUDY OR WITH PRELIMINARY RECOMMNEDATIONS

| Agency | County(s) | Unit Name | Unit Number | Net Unit Acreage | Acres Recommended |
|---|---|---|---|---|---|
| FS | Rosebud | King Mtn. | 1372 | 11,700 | — |
| FS | Carbon | Line Cr. Plateau | 1911 | 20,680 | — |
| FS | Carbon | Rock Creek | 1913 | 200 | — |
| FS | Lewis & Clark | Sawtooth | 1721 | 15,500 | — |
| FS | Cascade, Meagher | Tenderfoot-Deep Creek | 1726 | 88,400 | — |
| FS | Cascade | Pilgrim Creek | 1727 | 49,500 | — |
| FS | Cascade, Judith Basin | Paine Gulch | 1728 | 8,500 | — |
| FS | Cascade | Sawmill Creek | 1729 | 12,800 | — |
| FS | Judith Basin | TW Mtn. | 1730 | 8,500 | — |
| FS | Judith Basin, Cascade | Big Baldy | 1731 | 44,000 | — |
| FS | Judith Basin | Granite Mtn. | 1732 | 10,580 | — |
| FS | Judith Basin | Tollgate-Sheep | 1733 | 26,800 | — |
| FS | Judith Basin | Mount High | 1735 | 32,300 | — |
| FS | Choteau, Cascade, Judith Basin | Highwood-Baldy | 1737 | 15,600 | — |
| FS | Choteau, Judith Basin | Highwoods | 1738 | 24,100 | — |
| FS | Meagher, Wheatland | Bluff Mtn. | 1740 | 37,120 | — |
| FS | Meagher | Spring Creek | 1741 | 19,800 | — |
| FS | Meagher | Box Canyon | 1742 | 11,647 | — |
| FS | Meagher | Castle Mtns. | 1743 | 29,600 | — |
| FS | Meagher | North Fork of Smith | 1744 | 8,800 | — |
| FS | Meagher | Calf Creek | 1745 | 11,020 | — |
| FS | Meagher | Eagle Park | 1746 | 6,300 | — |
| FS | Beaverhead | Beaver Lake | X1003 | 13,474 | — |
| FS | Beaverhead | Saginaw Creek | X1004 | 8,493 | — |
| FS | Beaverhead | Tash Peak | X1005 | 62,119 | — |
| FS | Beaverhead | West Pioneers | X1006 | 90,750 | — |
| FS | Beaverhead | Call Mtn. | X1009 | 10,179 | — |
| FS | Beaverhead | Cattle Gulch Ridge | X1010 | 18,891 | — |
| FS | Beaverhead | Fleecer | X1011 | 36,873 | — |
| FS | Deer Lodge, Beaverhead | Granulated Mtn. | X1012 | 16,266 | — |
| FS | Beaverhead | Bear Creek | X1015 | 8,252 | — |
| FS | Beaverhead | Mckenzie Canyon | X1016 | 33,652 | — |
| FS | Beaverhead | Sourdough Peak | X1017 | 14,838 | — |
| FS | Beaverhead | Timber Butte | X1018 | 5,018 | — |
| FS | Beaverhead | Dixon Mtn. | X1019 | 3,982 | — |
| FS | Beaverhead | Four Eyes Canyon | X1020 | 6,856 | — |
| FS | Madison | Sheep Mtn. | X1021 | 32,115 | — |
| FS | Madison | Crockett Lakes | X1022 | 6,830 | — |
| FS | Madison | Cherry Lakes | X1023 | 12,940 | — |
| FS | Madison | Vigilante | X1024 | 16,458 | — |
| FS | Madison, Beaverhead | Snowcrest Mtn. | X1025 | 97,630 | — |
| FS | Madison | Black Butte | X1026 | 39,787 | — |
| FS | Madison | Big Horn Mtn. | X1027 | 50,390 | — |
| FS | Madison | Lone Butte | X1028 | 14,138 | — |
| FS | Madison, Beaverhead | Freezeout Mtn. | X1029 | 95,098 | — |
| FS | Beaverhead | Anderson Mtn. | X1942 | 48,451 | — |
| FS | Beaverhead | Goat Mtn. | X1944 | 9,454 | — |
| FS | Deer Lodge, Beaverhead | North Big Hole | 1001 | 56,779 | 6,571 |
| FS | Beaverhead | East Pioneer | 1008 | 144,558 | 80,273 |
| FS | Madison | Middle Mtn.-Tobacco Roots | 1013 | 93,327 | — |
| FS | Madison | Potosi | 1014 | 5,465 | — |
| FS | Beaverhead | West Big Hole | 1943 | 130,660 | 55,014 |

## TABLE G-5(Continued)
## OTHER AGENCY AREAS IN MONTANA UNDER WILDERNESS STUDY OR WITH PRELIMINARY RECOMMNEDATIONS

| | | | | | |
|---|---|---|---|---|---|
| FS | Beaverhead | Italian Peak | 1945 | 90,917 | 12,907 |
| FS | Beaverhead | Garfield Mtn. | 1961 | 42,777 | — |
| FS | Beaverhead | Mt. Jefferson | 1962 | 4,474 | — |
| | TOTAL FS | NUMBER OF AREAS | 180 | 5,611,789 ACRES | 691,617 ACRES |
| NPS | Big Horn | Big Horn Canyon | — | 7,645 | — |
| | TOTAL NPS | NUMBER OF AREAS | 1 | 7,645 ACRES | — |

"X" before the unit number indicates a new roadless area that was identified through the forest planning process, not through RARE II.

# APPENDIX H

# WILDERNESS MANAGEABILITY OF THE STUDY AREA

Based on the wilderness values of each WSA described in Chapter III, and the impacts on these wilderness values analyzed in Chapter IV, the Centennial Mountains would be most manageable as wilderness under Alternative 3, 4, 5, 6 and 8. The subdivision of the much land south of the Continental Divide by roads into discrete segments, the existance of the two large sheep experiment station inholdings with the ongoing vehicle supported agriculture experiment activities, the valid phosphate mining claims with numerous and conspicuous signs of past mining operations and the exclusions for phosphate mining remains and watershed contour furrowing adversely affect long term manageability. These intrusions reduce the quality of the wilderness experience that might be afforded if designation as well as complicating future wilderness management.

The southern boundary of the study area falls at mid-slope and is extremely difficult to locate on the ground as it does not follow either section lines or prominent topographic features such as ridges, hills or creeks. Numerous crooks and elbows in the southern boundary make project planning outside of the study area difficult and costly.

# APPENDIX I

# TIMBER PRODUCTION POTENTIAL IN THE CENTENNIAL MOUNTAINS

Suitable forest lands are those forest lands which are capable of providing at least 20 cubic feet of wood/acre/year and can be harvested without doing irrepairable damage to the environment.

Base information is from two separate inventories. Volume and yield information is from the extensive forest inventory done in 1972. Production capability is from the Timber Production Capability Class inventory done in 1979. This inventory determines the ability of the land to produce harvestable timber without irrepairable damage to the environment. It also indicates the land's ability to regenerate a new stand of trees in a reasonable period of time.

Site quality average on 31 plots in the Centennial Mountains ranged from 30 to 70 on a 50-year base and averaged 43.1 cubic feet/acre/year. Using an average board foot to cubic foot ratio of 4.6 to 1, the board foot/acre/year is 198 or 200 rounded.

Standing volume from plot data was 9,737 board feet/acre greater than 5 inch diameter at breast height.

Standing volume average for the Targhee is 7,130 board feet/acre.

Growth and yield data on the Targhee for regenerated stands ranges from 17 to 27 thousand board feet/acre on a rotation. This is with a precommercial thinning at 15 to 20 years of age. This is compatible with figures from the BLM extensive forest inventory. Rotation length varies by species and site. For purposes of this document we are calling rotation age 85 years.

Therefore, the average yield/acre for a 85-year rotation is 17,000 board feet.

# APPENDIX J
# WILDERNESS INVENTORY

WILDERNESS SUMMARY SHEET

LOCATION

Inventory unit No. (area or island, grouping of areas or islands): N/A

Areas/Island name: First Continental Exchange tack-on to Centennial Mountain Study Area

District: Butte State: Montana

SUMMARY

Results of wilderness characteristics analysis.

| | |
|---|---|
| Does the area or island appear to be natural? (Portions of the eastern and western subunits appear natural.) | _X_ yes ____ no |
| Does the area or island offer outstanding opportunities for solitude or a primitive and unconfined type of recreation? | ____ yes _X_ no |
| Does the area meet any of the size requirements? (The eastern subunit in conjunction with the Centennial Mountains Study Area meets the size requirement.) | _X_ yes ____ no |
| Does the area or island have supplemental values? | _X_ yes ____ no |

Resulting Map

Attach a map showing inventory unit, roads, area with possibility of returning to a natural state, recommended boundary of wilderness study area (WSA).

RECOMMENDATION

Check one:

____ Area or island should be approved as a WSA.

_X_ Area or island does not qualify for wilderness study.

____ A portion of the area(s) or island(s) should be approved as a WSA for further study and reported to the President. The restrictions imposed by Section 603 will no longer apply (reference to map) on the remainder of the area.

APPROVAL

District Manager:

Date: 12.2.86

State Director: Dean Stepanek

Date: 12-5-86

# WILDERNESS INTENSIVE INVENTORY

UNIT NO. Tack-on to Centennial Mountains Study Area

NAME OF AREA: First Continental Exchange

Explain by a concise narrative the following essential wilderness characteristics (for guidance see text in the Wilderness Inventory Handbook).

## Size

Narrative

The area contains 4,570 acres and is bounded by the Lakeview to Monida Road to the north, private lands and the Centennial Mountains Study Area to the east and the Price Peet Road to the south and west. An 80-acre private inholding is located inside the southern half of the area. Roads which meet the BLM standard for construction, maintenance, and use access this inholding and divide the acres into three subunits: the east portion is 2,590 acres, the south portion is 500 acres and the west portion is 1,480 acres.

Only the 2,590-acre eastern portion, in conjunction with the 72,885-acre Centennial Mountains Study Area, is of sufficient size to make practicable its preservation and use as wilderness.

Summary

Does the area have at least 5,000 acres of contiguous land and is it of sufficient size to make practicable its preservation and use in an unimpaired condition?

X yes ____ no

(The eastern portion in conjunction with the Centennial Mountains Study Area meets the size requirement.)

Does the island have sufficient size to make practicable its preservation and use in an umimpaired condition?

X yes ____ no

## Naturalness

Only the southern two-thirds of both the 2,590-acre eastern subunit and the 1,480-acre western subunit appear essentially natural.

A gravel pit and powerline inside the area boundaries along with a homestead and corral in T 14 S., R 4 W, Sec. 30 SENE and an offsite working ranch operation place the imprint of human activity on the northern portion affecting both the eastern and western subunits.

The southern 500-acre subunit is influenced primarily by human activity. These include the buildings in the inholding, a cabin in T 14 N, R 4 W, Sec. 7, NENE with outbuildings, firewood cutting remains, and an old car body. Also included are stacked log decks and a network of roads and recent clearcuts immediately adjacent to the present Centennial Mountains Study Area's western boundary.

The southern two-thirds of both the east segment and the west segment, divided by the north-south road which serves as the primary access to the private inholding, does appear natural and the overall impact of human activity in these portions is substantially unnoticeable.

Summary

Does the area or island generally appear to have been affected by the forces of nature, with the imprint of human activity substantially unnoticeable?

_X_ yes ____ no

(Portions of the eastern and western subunits appear natural.)

## Outstanding Opportunity for Solitude

Narrative

The area rises in elevation from the east, west Lakeview to Monida Road through rolling open, grasslands to forested areas in the south. Mixed grasses and low forbs along with scattered aspen and willow stands make up the vegetation in the northern 3,500 acres of the area. Lodgepole pine, Douglas-fir and aspen make up the forested 1,070 acres on the southern edge. Fingers of open meadow and grassland break up the continuity of the forested portion.

On the most densely forested southern subunit, interlacing roads and trails, cutting areas, stacked log decks and cabins are scattered throughout such that at no time would a visitor feel a sense of solitude. On the western and eastern subunits as well as the southern subunit, traffic on Price Peet Road and vehicles passing to and from the private inholding would periodically disrupt solitude. Vehicles on the Price Peet Road are easily visible from the middle of section 31 inside the western subunit. However, on the southern subunit, scattered stands of trees tend to screen offsite impacts.

Solitude for visitors in the eastern subunit may be disturbed by traffic on the north to south access road to the inholding, or by other visitors inside the unit. There is less vegetative screening and the open rolling land lends itself even less than in the western subunit to topographic screening.

Summary

Does the area have outstanding opportunities for solitude?

____ yes _X_ no

## Primitive and Unconfined Recreation

Narrative

The primary primitive recreation activity is hunting for mule deer in the northern portion and moose, deer, and elk to the south. Other activities include nature photography, hiking, and bird watching. None of these activities by itself or in total represents an outstanding opportunity.

Summary

Does the area have outstanding opportunities for a primitive and unconfined type of recreation?

____yes _X__no

### Supplemental Values

Narrative

Recent beaver dams and beaver activity was noticed in T 14 S, R 4 W, Sec. 30 SE. A picturesque homestead exists in T 14 S, R 4 W, Sec. 30 NESE. The area appears to be popular with raptors. A golden eagle, hawks, and kestrel were seen.

Summary

Does the area contain ecological, geological, or other features of scientific, educational, scenic, or historical value?

_X_yes ____no

### Possibility of Certain Areas Returning to a Natural Condition

Narrative

The most obvious sign of human activity are roads and homestead buildings. Reclamation would not be possible in either case.

Summary

If the area or island were to become a wilderness area, could the imprint of human activity be reduced by either natural processes or by hand labor to a level judged to be substantially unnoticeable?

____yes _X__no

PERSON COMPLETING ANALYSIS

SIGNATURE: Philip a. Guyon DATE: 11/23/86

# APPENDIX K
# IDAHO WILDERNESS STATUS SUMMARIES

The following summary tables list the current wilderness status for Idaho. Table K-1 lists the completed Idaho BLM wilderness studies awaiting Presidential recommendation. Table K-2 lists the statutory wilderness areas in Idaho.

**TABLE K-1**
**COMPLETED IDAHO BLM WILDERNESS STUDIES AWAITING PRESIDENTIAL RECOMMENDATIONS**

| District | Resource Area | Plan Name | Unit Name | Unit Number | Total Acreage | Preliminary Recommendation (State Director) |
|---|---|---|---|---|---|---|
| Boise | Owyhee | Owyhee | North Fork Owyhee River | ID-16-40 | 49,470 | |
| | | | Horsehead Spring | ID-16-41 | 6,210 | |
| | | | Squaw Creek Canyon | ID-16-42 | 10,780 | |
| | | | Middle Fork Owyhee River | ID-16-45 | 14,180 | |
| | | | West Fork Red Canyon | ID-16-47 | 12,970 | |
| | | | | Total Acres Suitable | | 39,745 |
| | | | | Total Acres Nonsuitable | | 53,865 |
| Boise | Owyhee/ Bruneau | Owyhee Canyonlands | Owyhee River Canyon | ID-16-48B | 33,700 | |
| | | | Little Owyhee River | ID-16-48C | 26,677 | |
| | | | Deep Creek - Owyhee River | ID-16-49A | 72,083 | |
| | | | Yatahoney Creek | ID-16-49D | 9,331 | |
| | | | Battle Creek | ID-16-49E | 31,540 | |
| | | | Juniper Creek | ID-16-52 | 12,682 | |
| | | | South Fork Owyhee River | ID-16-53 | 42,510 | |
| | | | | Total Acres Suitable | | 205,850 |
| | | | | Total Acres Nonsuitable | | 251,196 |
| Boise | Bruneau/ Owyhee | Jacks Creek | Little Jacks Creek | ID-111-6 | 58,040 | |
| | | | Duncan Creek | ID-111-7B | 10,005 | |
| | | | Big Jacks Creek | ID-111-7C | 54,833 | |
| Boise | Bruneau/ Owyhee | Jacks Creek | Pole Creek | ID-111-18 | 24,509 | |
| | | | Sheep Creek West | ID-111-36A | 11,680 | |
| | | | Sheep Creek East | ID-111-36B | 5,060 | |
| | | | Upper Deep Creek | ID-111-44 | 11,510 | |
| | | | | Total Acres Suitable | | 89,045 |
| | | | | Total Acres Nonsuitable | | 86,592 |
| Boise | Jarbridge/ Bruneau | Jarbridge | Jarbridge River | ID-17-11 | 75,340 | |
| | | | King Hill Creek | ID-19-2 | 30,420 | |
| | | | Bruneau River | ID-111-17 | 107,020 | |
| | | | | Total Acres Suitable | | 31,410 |
| | | | | Total Acres Nonsuitable | | 181,370 |

## TABLE K-1 (Continued)
## COMPLETED IDAHO BLM WILDERNESS STUDIES AWAITING PRESIDENTIAL RECOMMENDATIONS

| District | Resource Area | Plan Name | Unit Name | Unit Number | Total Acreage | Preliminary Recommendation (State Director) |
|---|---|---|---|---|---|---|
| Idaho Falls | Big Butte/ Challis | Big Lost/ Pahsmero | Appendicitis Hill | ID-31-14 | 21,900 | |
| | | | White Knob Mountains | ID-31-17 | 9,950 | |
| | | | Burnt Creek | ID-45-12 | 24,980 | |
| | | | | Total Acres Suitable | | 0 |
| | | | | Total Acres Nonsuitable | | 56,830 |
| Idaho Falls | Pocatello | Eastern Idaho | Petticoat Peak | ID-28-1 | 11,298 | |
| | | | Hawley Mountains | ID-32-3 | 15,510 | |
| | | | Black Canyon | ID-32-9 | 5,400 | |
| | | | Cedar Butte | ID-33-4 | 35,700 | |
| | | | Hell's Half Acre | ID-33-15 | 66,200 | |
| | | | | Total Acres Suitable | | 66,200 |
| | | | | Total Acres Nonsuitable | | 67,908 |
| Idaho Falls | Medicine Lodge | Medicine Lodge | Table Rock Island | ID-34-2 | 380 | |
| | | | Pine Creek Island | ID-34-3 | 155 | |
| | | | Conant Valley Island | ID-34-4 | 235 | |
| | | | Sand Mountain | ID-35-3 | 21,100 | |
| | | | | Total Acres Suitable | | 0 |
| | | | | Total Acres Nonsuitable | | 21,870 |
| Salmon | Lemhi | Lemhi | Eighteen Mile | ID-43-3 | 24,922 | |
| | | | | Total Acres Suitable | | 0 |
| | | | | Total Acres Nonsuitable | | 24,922 |
| Salmon | Challis | Challis | Corral-Horse Basin | ID-46-11 | 48,500 | |
| | | | Jerry Peak | ID-46-14 | 46,150 | |
| | | | Jerry Peak West | ID-46-14A | 13,530 | |
| | | | | Total Acres Suitable | | 46,150 |
| | | | | Total Acres Nonsuitable | | 62,030 |
| Shoshone | Monument/ Bennett Hills | Shoshone/ Sun Valley | Friedman Creek | ID-53-5 | 9,773 | |
| | | | Little City of Rocks | ID-54-5 | 5,875 | |
| | | | Black Canyon | ID-54-6 | 10,371 | |
| | | | Gooding City of Rocks | ID-54-8A | 14,743 | |
| | | | Gooding City of Rocks | ID-54-8B | 6,287 | |
| | | | Deer Creek | ID-54-10 | 7,487 | |
| | | | | Total Acres Suitable | | 19,350 |
| | | | | Total Acres Nonsuitable | | 35,186 |

## TABLE K-1 (Continued)

## COMPLETED IDAHO BLM WILDERNESS STUDIES AWAITING PRESIDENTIAL RECOMMENDATIONS

| | | | | | | |
|---|---|---|---|---|---|---|
| Shoshone | Monument/ Bennett Hills | Monument | Lava | ID-56-2 | 23,680 | |
| | | | Shale Butte | ID-57-2 | 15,968 | |
| | | | Sand Butte | ID-57-8 | 20,792 | |
| | | | Raven's Eye | ID-57-10 | 67,110 | |
| | | | Little Deer | ID-57-11 | 33,531 | |
| | | | Bear Dam Butte | ID-57-14 | 9,700 | |
| | | | Shoshone | ID-59-7 | 6,914 | |
| | | | | Total Acres Suitable | | 87,902 |
| | | | | Total Acres Nonsuitable | | 89,793 |
| Coeur d'Alene | Emerald Empire | North Idaho | Crystal Lake | ID-61-10 | 9,027 | |
| | | | Grandmother Mountain | ID-62-15A/B | 17,129 | |
| | | | Snowhole Rapids | ID-62-1 | 5,068 | |
| | | | Marshall Mountain | ID-62-10 | 5,804 | |
| | | | | Total Acres Suitable | | 0 |
| | | | | Total Acres Nonsuitable | | 37,028 |
| Idaho Falls | Big Butte | China Cup Butte | China Cup Butte | — | 160 | |
| | | | | Total Acres Suitable | | 0 |
| | | | | Total Acres Nonsuitable | | 160 |
| Boise | Owyhee/ Bruneau | Snake River Birds of Prey | Snake River Birds of Prey | — | 26,713 | |
| | | | | Total Acres Suitable | | 0 |
| | | | | Total Acres Nonsuitable | | 26,713 |
| Shoshone/ Idaho Falls | Big Butte/ Monument | Great Rift | Great Rift | — | 341,000 | |
| | | | | Total Acres Suitable | | 341,000 |
| | | | | Total Acres Nonsuitable | | 0 |

## TABLE K-2

## IDAHO STATUTORY WILDERNESS (ALL AGENCIES)

| Agency | Unit Name | Unit Number | Unit Acreage |
|---|---|---|---|
| NPS | Craters of the Moon | NP-005 | 43,243 |
| FS | Gospel Hump | — | 206,000 |
| FS | River of No Return | NF-913 | 2,239,000 |
| FS | Sawtooth | NF-072 | 217,088 |
| FS | Selway-Bitterroot | NF-074 | 1,089,923* |
| FS | Hell Canyon | NF-034 | 84,100* |
| Total FS and NPS | Numbers of Areas 6 | | 3,878,669 |

* The acreages include only those found in Idaho.

# APPENDIX L
# BEST MANAGEMENT PRACTICES

## BUREAU OF LAND MANAGEMENT

The following Best Management Practices are adapted from the Montana Statewide 208 study (Montana 1979). In general, these practices are designed to avoid or reduce nonpoint sources of water pollution resulting from forest management practices and similar activities.

### Road System

Road locations, particularly in sensitive areas, should be evaluated by an engineer, soil scientist, wildlife biologist, and others as needed. Fit location to the topography to minimize cut and fill situations. In areas of important big game habitat, consultation with the wildlife biologist will be necessary to reduce location impact on ridgelines, saddles, and upper drainage heads.

Where alternative road locations are not possible, incorporate mitigative measures into plans.

Maintain streambank vegetation when crossing streams. Avoid stream crossings if possible; otherwise, minimize approach cuts and fills and channel disturbance.

Do not locate stream crossings strictly on where road grade indicates. Choose a stable site and adjust grade to it, when possible.

Keep stream disturbance to an absolute minimum.

If necessary, include short road segments with steeper grades, consistent with traffic needs and safety, to avoid problem areas or to take advantage of terrain features.

For timber harvest roads, take advantage of natural landing areas (flatter, better drained, open areas) to reduce soil disturbance associated with log landings and temporary work roads.

Vary road grades where possible to reduce concentrated flow in road drainage ditches and to reduce erosion on road surfaces.

Design drainage ditches, water bars, culvert placement, etc. in such a way as to disperse runoff and minimize cut and fill erosion.

Install culverts frequently enough to avoid accumulations of water that will cause erosion of road ditches and the area below the culvert outlet.

Seed (e.g., revegetate) cuts and fills the first fall season following disturbance.

Deposit excess materials in stable locations well above the high water level and never into stream channel. Do not allow any material, including sidecast soil, stumps, logs, or other material to be deposited into a stream.

Plan ditch gradients steep enough (generally greater than 2 percent) to prevent sediment deposition.

When installing culverts, avoid changes in channel orientation and place culverts to conform to the natural channel gradient. Design culverts for maximum stream flow (e.g., 25 year discharge, etc.).

Skew culverts 30 degrees toward the inflow to provide better inlet efficiency.

Provide rock or other splash basins at the outlet end of culverts.

In some areas, alternating inslope and outslope sections can be built into the road especially if road grades are rolled to dispose of road surface flow.

Obtain all necessary permits for stream crossings before beginning activities.

Maintain roads immediately after logging and whenever necessary by cleaning ditch lines, blading debris from empty landings, trimming damaged culvert ends and cleaning out culvert openings. Culverts, cross drains, and dips should be cleaned regularly to assure proper functioning, especially before winter or expected rainy seasons. Debris should be removed from live drainages upstream from the inlet.

Grade the road surface as often as necessary to retain the original surface drainage (either insloped or outsloped). Take care to avoid sidecasting graded material over the fill slope. Carefully monitor surface drainage during wet periods and close the road if necessary to avoid undue damage. Restore surfacing on the road tread and in the road ditch if necessary following damage caused by operation in wet periods.

Haul all excess material removed by maintenance operations to safe disposal areas. Apply stabilization measures on disposal sites if necessary to assure that erosion and sedimentation do not occur.

Use the steepest slopes possible on cut and fill slopes commensurate with the strength of the soil and bedrock material as established by an engineering geologist or other specialist in soil mechanics. Benching cut slopes in area of weak or erodible bedrock (e.g., weathered granites) into a series of properly drained terraces provides opportunity for vegetative establishment and may even require less excavation.

Control roadside brush only to the extent required for good road maintenance.

### Logging Practices

Avoid logging across any stream supporting resident fish or on any stream where a downstream water system might be affected.

Time logging activities for the season in which soil damage can be kept to acceptable limits.

Design and locate skid trail and skidding operations to avoid across ridge and across drainage operation.

Avoid yarding in stream channels.

Install water bars on skid trails when logging is finished (soil scientist and/or engineer will provide assistance as requested and/or needed).

Avoid trapping and turning small streams out of their natural beds in tractor trails and landings.

Deposit excess materials from landings and skid trails in such locations that it will not get cut or be washed into streams.

If debris should enter any stream, such debris shall be removed concurrently with the yarding operation and before removal of equipment from the project site. Removal of debris shall be accomplished in such a way that natural streambed conditions and streambank vegetation are not disturbed.

Provide appropriate width buffer strips adjacent to perennial and intermittent streams, springs, and wet meadows.

## FOREST SERVICE

All projects affecting or suspected of affecting the watershed resource will incorporate Best Management Practices into the project design and implementation. The source document for candidate Best Management Practices will be the *Soils and Water Conservation Practices Handbook* (USDA, FS 1986c). Project analysis will determine which of the candidate Best Management Practices is appropriate for a given project and situation.

# GLOSSARY REFERENCES INDEX

# GLOSSARY

Including Acronyms and Abbreviations)

**ALLOTMENT.** An area designated for the use of a prescribed number of sheep or cattle.

**AIRSHED.** Basic unit in which air quality is managed.

**ANTICLINAL.** Inclined toward each other, as, the ridge tiles of the roof of a house.

**AUM.** Animal Unit Month. A standardized unit of measurement of the amount of forage necessary for the complete subsistence of one animal unit (one cow or one horse or five sheep, all over six months old) for one month; also, a unit of measurement of grazing privilege which represents the privilege of grazing one animal for a period of one month.

**BAILEY-KUCHLER SYSTEM.** A land classification system which divides the United States into various ecosystems based upon an integration of the natural factors of climate, vegetation, soils, and landform.

**BIG GAME.** Those species or large mammals normally managed as a sport hunting resource; e.g. elk, deer, bear.

**BLM.** Bureau of Land Management.

**BOARD FOOT.** The amount of timber equivalent to a piece of wood one foot by one foot by one inch thick.

**BROWSE.** Twigs, leaves, and young shoots of trees and shrubs which animals feed on; in particular, those shrubs which are utilized by big game animals for food.

**CLASS II AIRSHED.** An area that allows a small to moderate amount of air quality degradation. Area in which increases in contaminant concentration over the baseline concentration shall be limited to those in Table L-1.

TABLE L-1

CLASS II ALLOWABLE INCREASES

| Contaminant | Maximum allowable increase (micrograms per cubic meter) |
|---|---|
| Particulate matter: | |
| Annual geometric mean | 19 |
| 24-hr maximum | 37 |
| Sulfur dioxide: | |
| Annual arithmetic mean | 20 |
| 24-hr maximum | 91 |
| 3-hr maximum | 512 |

**CLEARCUTTING.** The removal in a single cut of the entire standing crop of trees. It eliminates all shade sources and prepares the area for rapid seed germination and growth of a new even-aged stand.

**CHERRY-STEMMED ROAD.** A deadend road protruding into a wilderness study area. The road and the area around the road, which is disturbed during construction, are considered outside the study area boundaries.

**COMMERCIAL FOREST LAND.** Forest land which is producing or capable of producing crops of industrial wood and which has not been reserved or deferred. This includes areas suitable for management to grow crops of industrial wood generally of a site quality capable of producing in excess of 20 cubic feet per acre of annual growth. This includes both accessible and inaccessible areas. Permanently inoperable or nonstocked areas are excluded because they are not suitable for silvicultural management. Conversely, nonstocked areas which are stockable and otherwise meet this definition are included.

**COMMON VARIETY MINERALS.** See salable minerals.

**COVER.** Vegetation used by wildlife for protection from predators (hiding) or for shelter (thermal).

**COVER EFFECTIVENESS.** Cover effectiveness reduces hunting impact upon the bull elk population, and meets both hiding cover and thermal cover requirements of the species.

**CULTURAL RESOURCE.** Evidence of human behavior.

**DIATREME.** A general term for a volcanic vent or pipe emplaced in rocks (usually flat-lying sedimentary rocks) by the explosive energy of gas-charged magmas.

**DIVERSITY.** The distribution and abundance of different plant and animal communities and species.

**EDGE HABITAT.** Habitat which provides a diversity of wildlife cover and forage because different vegetative types are associated together in a relatively small area.

**EIS.** Environmental Impact Statement.

**ENDANGERED SPECIES.** Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.

**ENVIRONMENTAL IMPACT STATEMENT (EIS).** A detailed written report for a proposal on which a significant impact or land allocation is anticipated.

**FORAGE.** Refers specifically to all browse and nonwoody plants that are available to livestock or game animals and used for grazing or harvested for feeding.

**FORBS.** Foot; a broadleaf herb other than grass. See forage, also.

**FS.** Forest Service.

**FWS.** Fish and Wildlife Service, a division of the U.S. Department of Interior.

**GEOLOGIC FAVORABILITY.** An estimate of potential for the occurrence of energy and nonenergy. The four categories of geologic favorability are:

> **VERY HIGH FAVORABILITY.** Areas where a number of geologic characteristics are present that indicate the occurrence of a given resource. Unfavorable characteristics are few or absent. At least some characteristics are diagnostic of a particular mineral deposits model. Information on past, present, and planned activity in the area supports or reinforces the area's geologic favorability.

**HIGH FAVORABILITY.** Areas where a number of geologic characteristics are present that indicate the occurrence of a given structure.

**MODERATE FAVORABILITY.** Areas where some geologic characteristics are present that are favorable for the occurrence of a given resource.

**LOW FAVORABILITY.** Areas where a few geologic characteristics favorable for the occurrence of a given resource are present.

**HABITAT MODIFICATION.** To cause or bring about a change to the natural place of abode of a plant or animal species.

**HABITAT TYPE.** An aggregation of all land areas potentially capable of producing similar plant communities at climax.

**HIGH VALUE FISHERIES.** Habitat that maintains outstanding populations of species of high interest to the State of Montana. Includes self-sustaining wild populations that maintain a high yield or represent an exceptional aesthetic scientific, economic, educational, or recreational value.

**IDF&G.** Idaho Department of Fish and Game.

**IGBST.** Interagency Grizzly Bear Study Team.

**INTERMITTENT CREEKS.** Drainages where streamflow occurs during wet weather, usually fifty percent of the year.

**INHOLDING.** A parcel of nonpublic land surrounded by public land.

**ISSUE.** A subject or question of widespread public interest identified through public participation.

**KEROGEN.** The solid bituminous mineraloid substance in oil shales which yields oil when the shales undergo destructive distillation.

**LEASABLE MINERALS.** Those minerals or materials subject to lease by the federal government. Includes oil and gas, coal, phosphate, sodium, potash, and oil shale.

**LOCATABLE MINERALS.** Minerals or materials subject to disposal and development through the Mining Law of 1872 (as amended). Generally includes metals such as gold and silver and other materials not subject to lease or sale (Some bentonites, limestones, talc, some zeolites, etc.).

**MG/L.** Milligram per liter.

**MANAGEMENT FRAMEWORK PLAN.** A planning decision document that establishes, for a given planning area, land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection. An MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decision making. BLM plans developed after 1981 under an altered planning system will be called RMPs (Resource Management Plans).

**MANAGEMENT PRESCRIPTION.** A written direction for managing the condition or availability of land and associated natural resources.

**MANAGEMENT PRIORITY SPECIES.** A species that is protected by either national or state laws.

**MASS WASTING.** The downslope movement of rock debris. A general term for a variety of processes by which large masses of earth material are moved by gravity either slowly or quickly from one place to another.

**MDFWP.** Montana Department of Fish, Wildlife and Parks.

**MITIGATE.** To lessen the severity.

**MMBF.** Million Board Feet; measurement of 1,000,000 board feet of wood fiber volume, either in log form or after conversion into lumber.

**MODERATE VALUE FISHERIES.** Moderate habitat for highly valued species and/or substantial habitat for less highly valued species. (USDA, FWS 1980).

**MONITORING PLAN.** A systematic approach to observing, measuring and recording the operation of a management system during the planning period; the goal of monitoring is to detect significant deviation from planned direction, outputs or effects and initiate change as needed to assure planned results.

**MULTIPLE USE.** The management of all the various resources so that they are utilized in the combination that will best meet the needs of the American people.

**NATIONAL FOREST LANDS.** Lands administered by the Forest Service.

**NONGAME.** Species of animals which are not managed as a sport hunting resource.

**NPS.** National Park Service, a division of the U.S. Department of Interior.

**NWR.** National Wildlife Refuge.

**OFF ROAD VEHICLE.** Any vehicle capable of being operated off an established road or trail; e.g. motorbikes, four-wheeled drive vehicles and snowmobiles.

**OLD GROWTH.** A stand of trees that is past full maturity and showing decadence; the last stage in forest succession.

**ORV.** Off road vehicle.

**PATENTED CLAIM.** A claim on which title has passed from the federal government to the mining claimant under the 1872 mining law.

**PERENNIAL CREEKS.** Drainages where water flow persists ninety percent of the year in well-defined channels.

**PINE BARK BEETLE.** A tiny black insect that ranges in size from one-eighth of an inch to three-fourths of an inch. The beetle bores its way into the tree's cambium and cuts off its supply of food, thus killing the tree.

**PLANNING CRITERIA.** The factors used to guide development or revision of the resource management plan to ensure that it is tailored to the issue previously identified and to ensure that unnecessary data collection and analysis are avoided. Planning criteria are developed to guide the collection and use of inventory data and information, the analysis of the management situation, the design and formulation of alternatives, the estimation of the effects of alternatives, the evaluation of alternatives, and the selection of the preferred alternative.

**POLICY.** A guiding principle which is based on a specific decision or set of decisions.

**PUBLIC LANDS.** Lands administered by the Bureau of Land Management.

**PUBLIC PARTICIPATION ACTIVITIES.** Meetings, conferences, seminars, workshops, tours, written comments, response to survey questionnaires, and similar activities designed and held to obtain comments from the general public and specific publics.

**RARE II.** Roadless Area Review and Evaluation II.

**RECREATION (Developed).** That type of recreation that occurs where modifications (improvements) enhance recreation opportunities and accommodate intensive recreation activities in a defined area.

**RECREATION (Dispersed).** That type of recreation use that requires few, if any, improvements and may occur over a wide area. This type of recreation involves activities related to roads and trails. The activities do not necessarily take place on or adjacent to a road or trail, only in conjunction.

**RECREATION VISITOR DAY.** One visitor day equals 12 hours (one person for 12 hours, or 12 people for 1 hour, or any combination thereof).

**RIPARIAN.** Land areas which are directly influenced by water. They usually have visible vegetative or physical characteristics showing this water influence. Streamsides, lake borders, or marshes are typical riparian areas.

**ROADLESS AREA REVIEW AND EVALUATION II.** A natural program with the purpose of identifying areas suitable for wilderness and making recommendations to Congress regarding their designation.

**ROTATION PERIOD.** The period in years it takes to convert a natural old growth forest from its existing state to one of healthy young growing trees.

**RVD.** Recreation Visitor Day.

**SALABLE MINERALS.** Common variety materials (sand and gravel, decorative stone, pumice, etc.) which are disposed of by sale by the federal government.

**SCORP.** (Montana) Statewide Comprehensive Outdoor Recreation Plan.

**SCS.** Soil Conservation Service.

**SECURITY COVER (Hiding Cover).** The vegetation and topographic complex capable of essentially hiding an animal from view.

**SENSITIVE SPECIES.** Those plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations; require special consideration; can be easily crowded out by more dominant animals or plants or human disturbance.

**SHEEP STATION.** The sheep experimental station located in the Centennial Mountains and managed by the Agricultural Research Service.

**SIMO TRACTS.** Tracts which are leased through the simultaneous oil and gas lottery program.

**SITUATION 2 GRIZZLY BEAR HABITAT.** Suitable habitat in which grizzly bears are known or highly suspected to occur but about which there is inadequate information to classify the habitat as necessary for recovery of the species.

**STAND.** An aggregation of trees or other growth occupying a specific area and sufficiently uniform in composition (species), age arrangement, and condition as to be distinguishable from other growth on adjoining areas.

**SUITABLE FOREST LAND.** Forest land where technology is available that will ensure timber production from the land without irreversible resource damage to soils, productivity, or watershed conditions. There is reasonable assurance that such lands can be adequately restocked as provided in CFR 219.13 (h) (3).

**SUITABILITY.** The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

**SUSTAINED YIELD.** The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of various renewable resources without impairment of the productivity of the land. Sustained yield management, therefore, implies continuous production so planned as to achieve at the earliest practical time a balance between increment and cutting.

**TEMPERATURE INVERSION.** A meteorological condition where temperature increases with altitude. A stable condition where mixing is dampened. In the intermountain west, inversions occur very frequently.

**THERMAL COVER.** Cover used by animals to ameliorte effects of weather; for elk, a stand of coniferous trees 40 feet or more trail with an average crown closure of 70 percent or more.

**THREATENED AND ENDANGERED SPECIES.** A species or subspecies of animals or plants whose prospects of survival and reproduction are in immediate jeopardy, or likely to become so within the foreseeable future. Threatened species are identified by the Secretary of Interior in accordance with the 1973 Endangered Species Act.

**TRANSITORY RANGE.** Land areas that are suitable for livestock grazing use on a temporary basis over a period of time.

**UPLIFT.** Elevation of any extensive part of the earth's surface relative to some other parts.

**U.S.** United States.

**USDA.** United States Department of Agriculture.

**USDI.** United States Department of Interior.

**VISITOR DAY.** The use of an area for a total of 12 person hours by one or more people, either continuously or over several visits.

**VISUAL RESOURCE.** The composite of basic terrain, geologic features, water features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

**WATER QUALITY STANDARDS.** Quantitative or qualitative criteria for chemical, physical and biological characteristics that are established for the purpose of providing water that is suitable for specific uses.

**WATERSHED.** A drainage basin feeding a stream, river, or lake.

**WET AREAS.** Often referred to as moist sites, they are very important components of elk summer range. These sites, often occurring at the heads of drainages, may be wet sedge meadows, bogs, or seeps. Sites near water are important because the forage they produce are highly nutritious and heavily utilized by elk.

**WILDERNESS.** Under the 1964 Wilderness Act, wilderness is undeveloped federal land retaining its primeval character and influence without permanent improvements or human habitation. It is protected and managed so as to preserve its natural conditions which generally appear to have been affected by the forces of nature with the imprints of human activity substantially unnoticeable; has outstanding opportunities for solitude or a primitive recreation; has at least 5,000 acres or is of sufficient size to make practical its preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecologic interest.

**WITHDRAWAL.** Segregation and dedication of the lands either immediately or prospectively for some specific public use or purpose. Withdrawals may bar all uses of the land or they may bar some and allow others.

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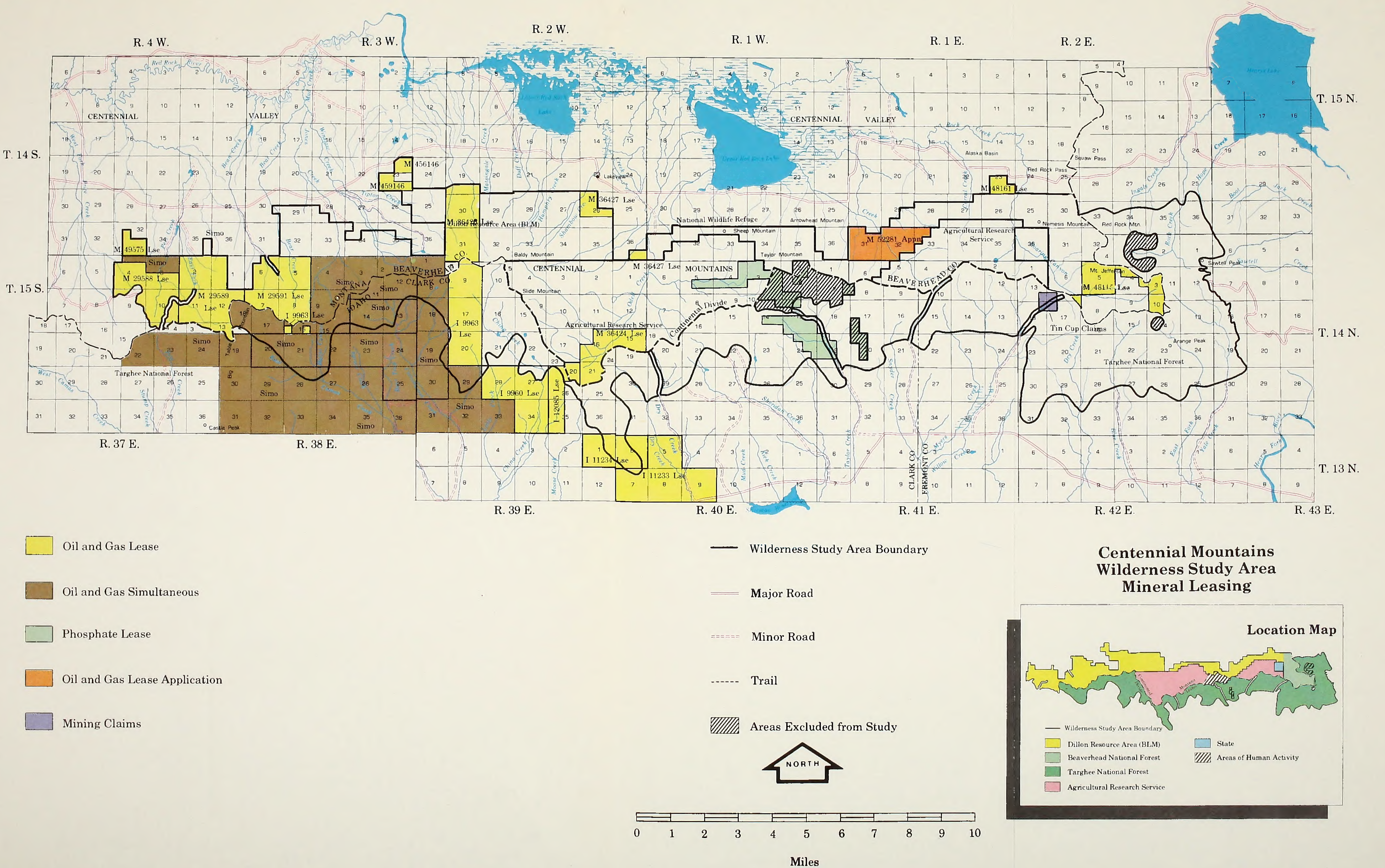
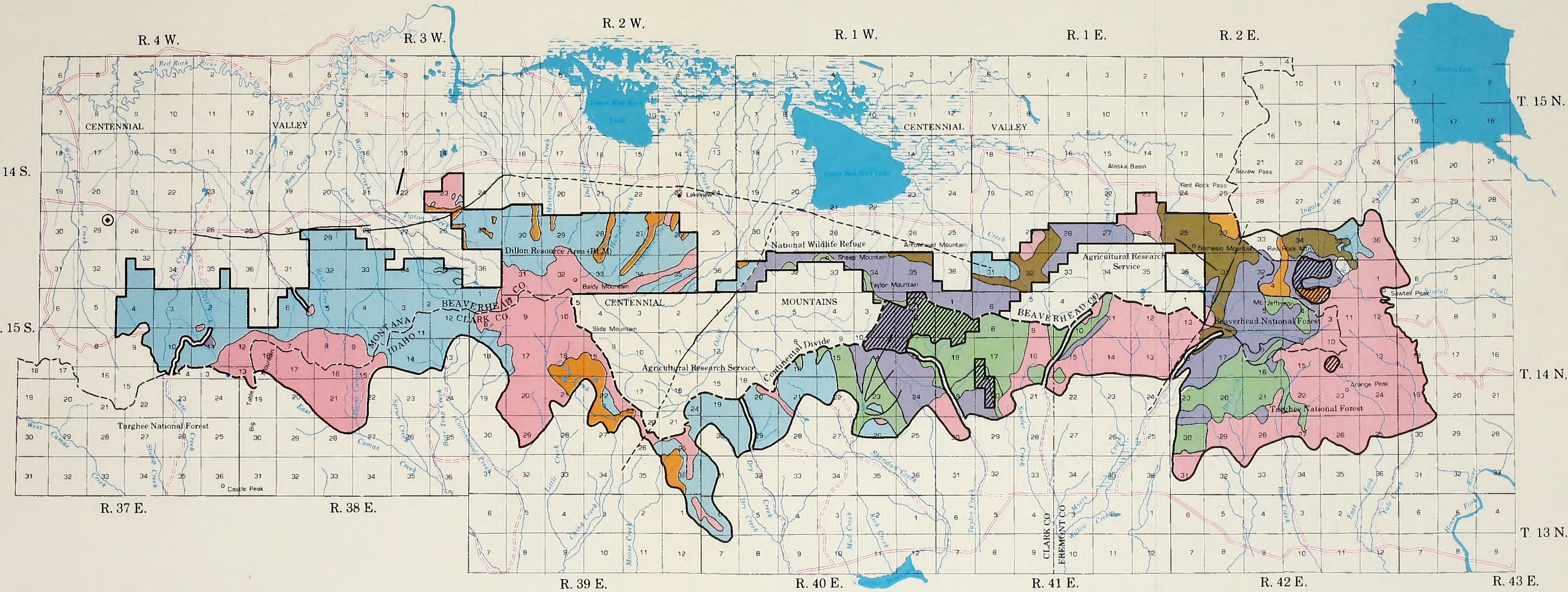
# MAPS



## Centennial Mountains Wilderness Study Area Mineral Leasing



# Centennial Mountains Wilderness Study Area Soils and Geology

🟫 Precambrain Metamorphics

🟪 Paleozoic Sedimentary Rocks Limestones

🟥 Volcanic Rocks

🟦 Cretaceous, Mesozic, Tertiary Sedimentary Rocks

🟧 Quaternary Alluvium

🟩 Sandstone

— - - Fault dashed where approx.

⊙ American Quasar Peet Creek #1 (Dry Hole)

— Wilderness Study Area Boundary

Major Road

Minor Road

------ Trail

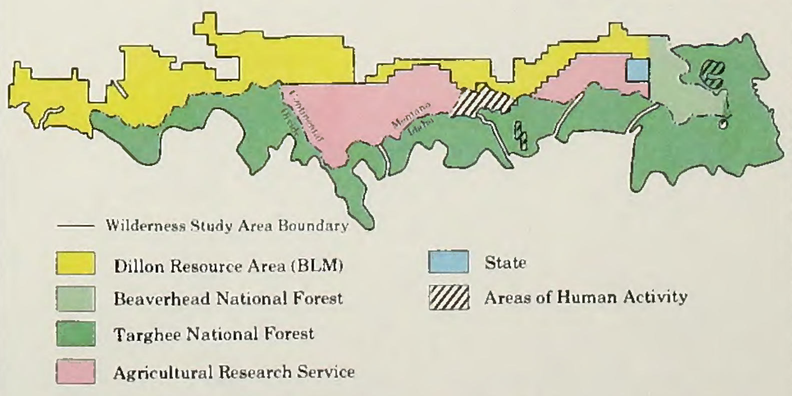
▨ Areas Excluded from Study

NORTH

0 1 2 3 4 5 6 7 8 9 10

Miles

## Location Map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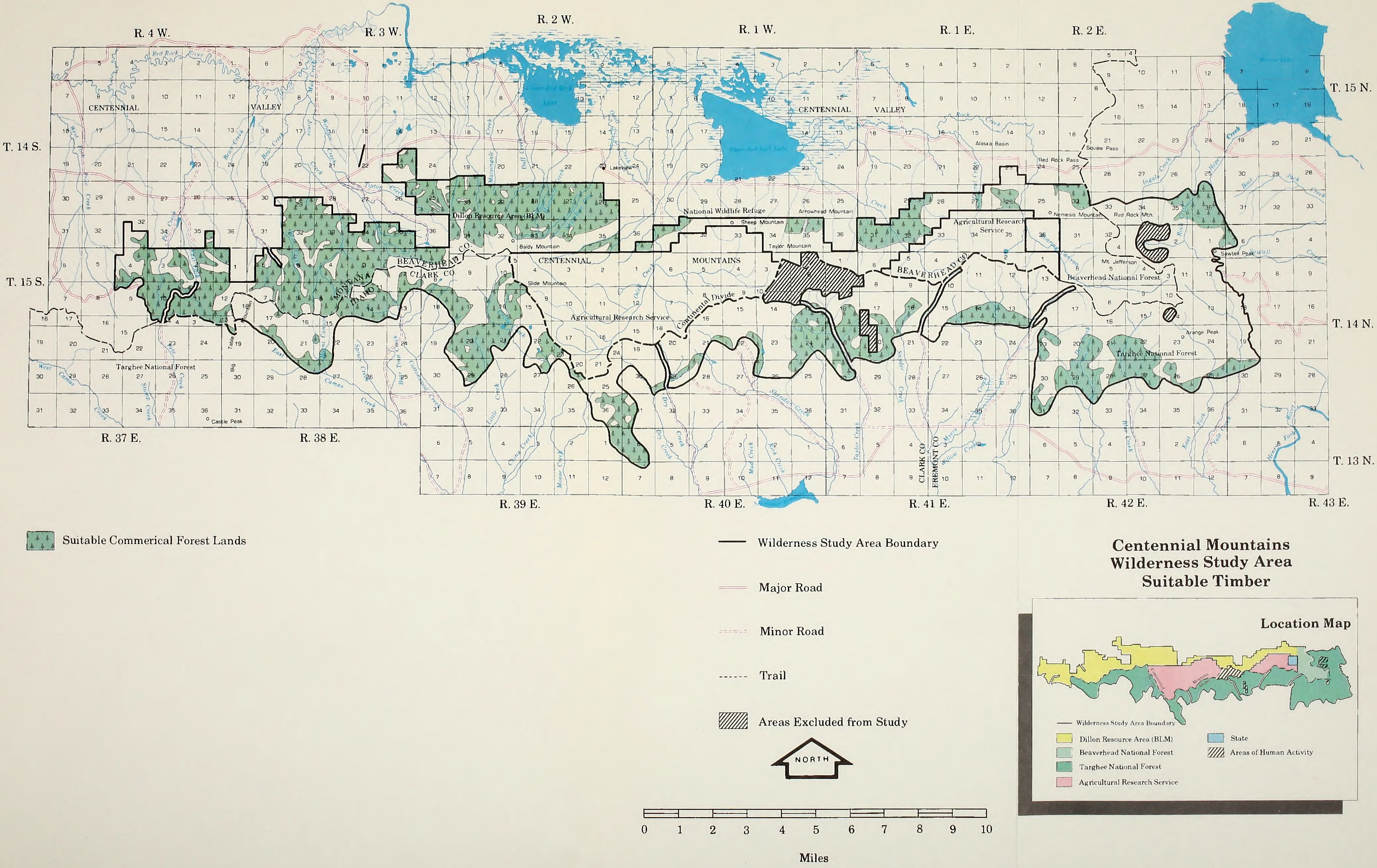
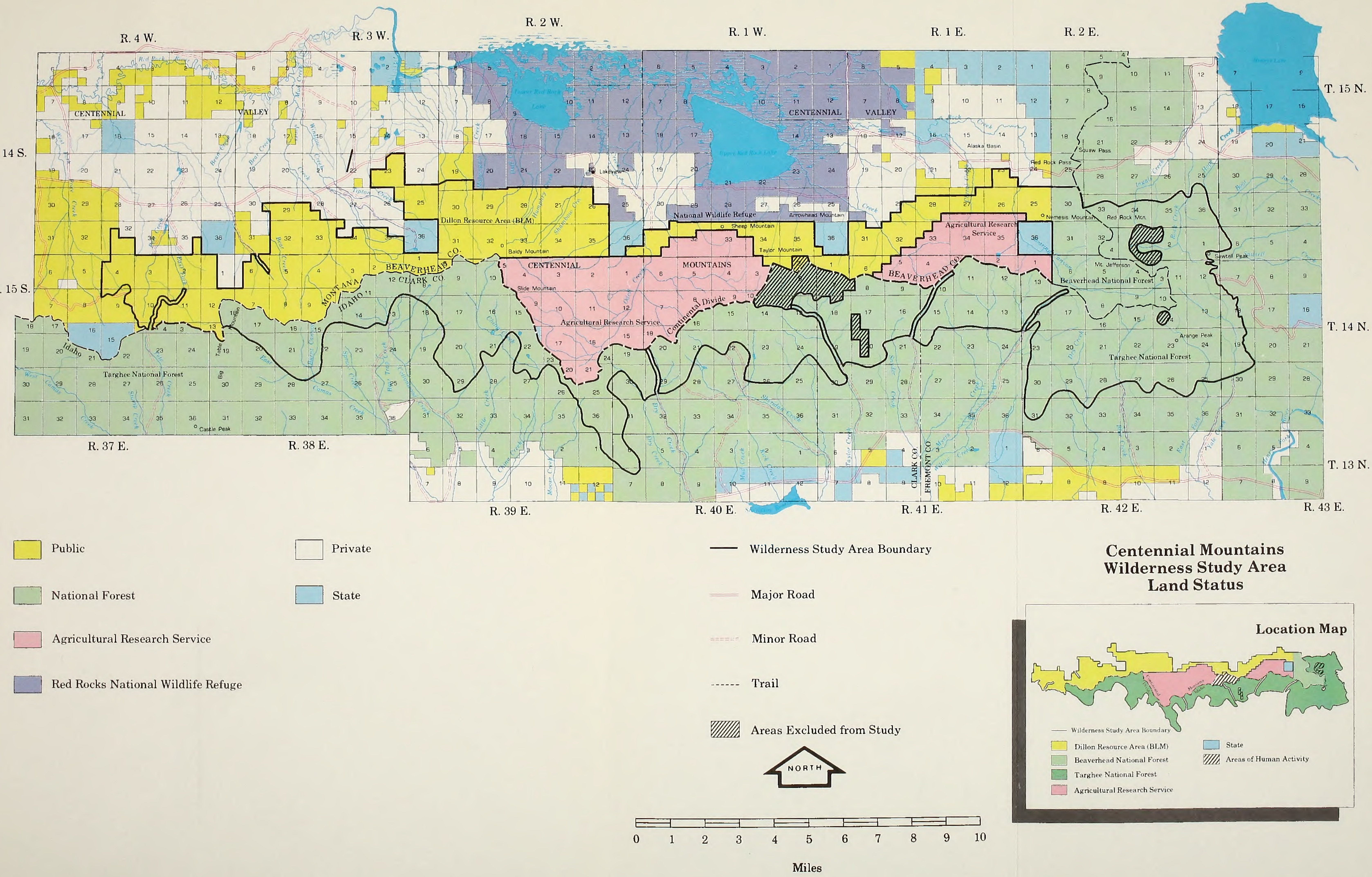
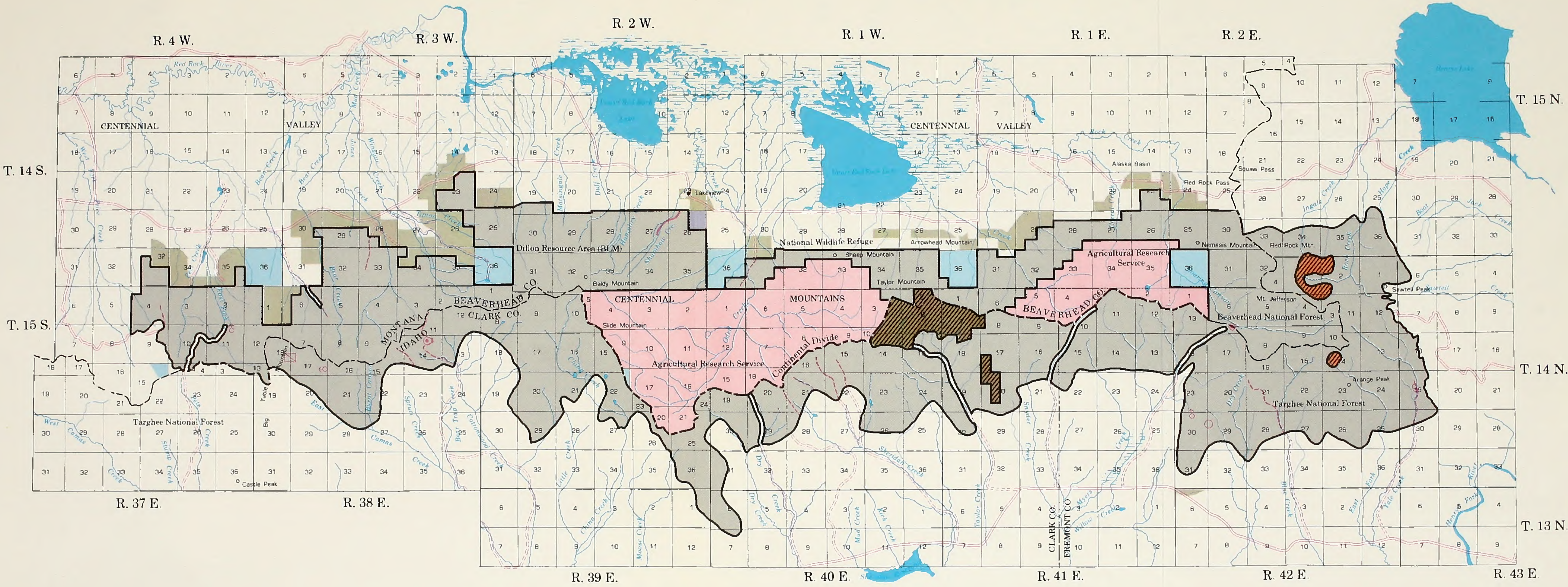
Beaverhead National Forest
Targhee National Forest
Agricultural Research Service
State
Areas of Human Activity



## Centennial Mountains Wilderness Study Area Suitable Timber

# Centennial Mountains Wilderness Study Area Land Status





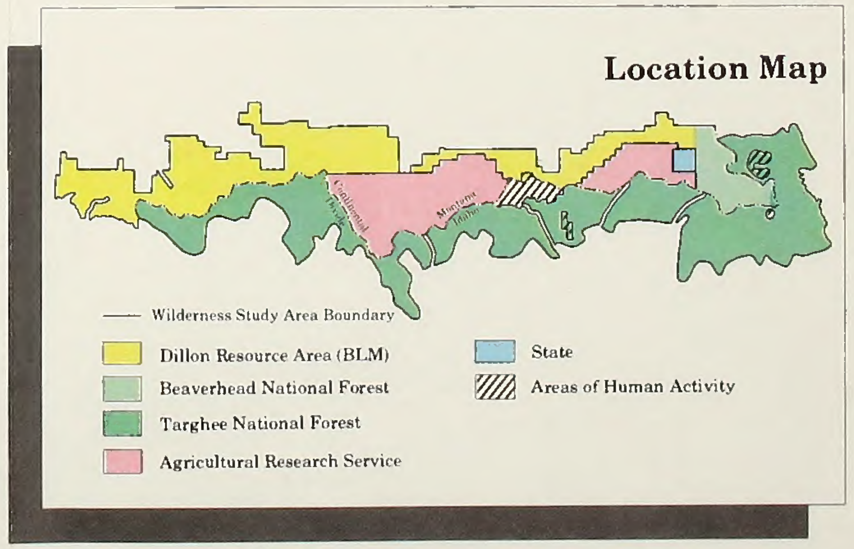
# Centennial Mountains Wilderness Study Area Impacts to Wilderness Values

- ▨ Vegetative Spraying Area
- ○ Vegetative Reseeding
- 🟪 Ski Lift Development
- 🟦 State Inholding
- 🟫 Phosphate Mining Area
- ◉ Abandoned Coal Mine
- 🟥 Agricultural Research Service
- ◈ Building Stone Mine
- 🟧 Watershed Contouring Projects
- ╯ Soil Conservation Service Snow Course
- ○→ Developed Spring
- ------ Vehicle Way
- ▩ Private land within 1/2 miles of Wilderness Boundary
- ▩ Centennial Mountains Wilderness Study Area
- ▬ Wilderness Study Area Boundary
- ═ Major Road
- ==== Minor Road
- ------ Trail
- ▨ Areas Excluded from Study

NORTH

0 1 2 3 4 5 6 7 8 9 10

Miles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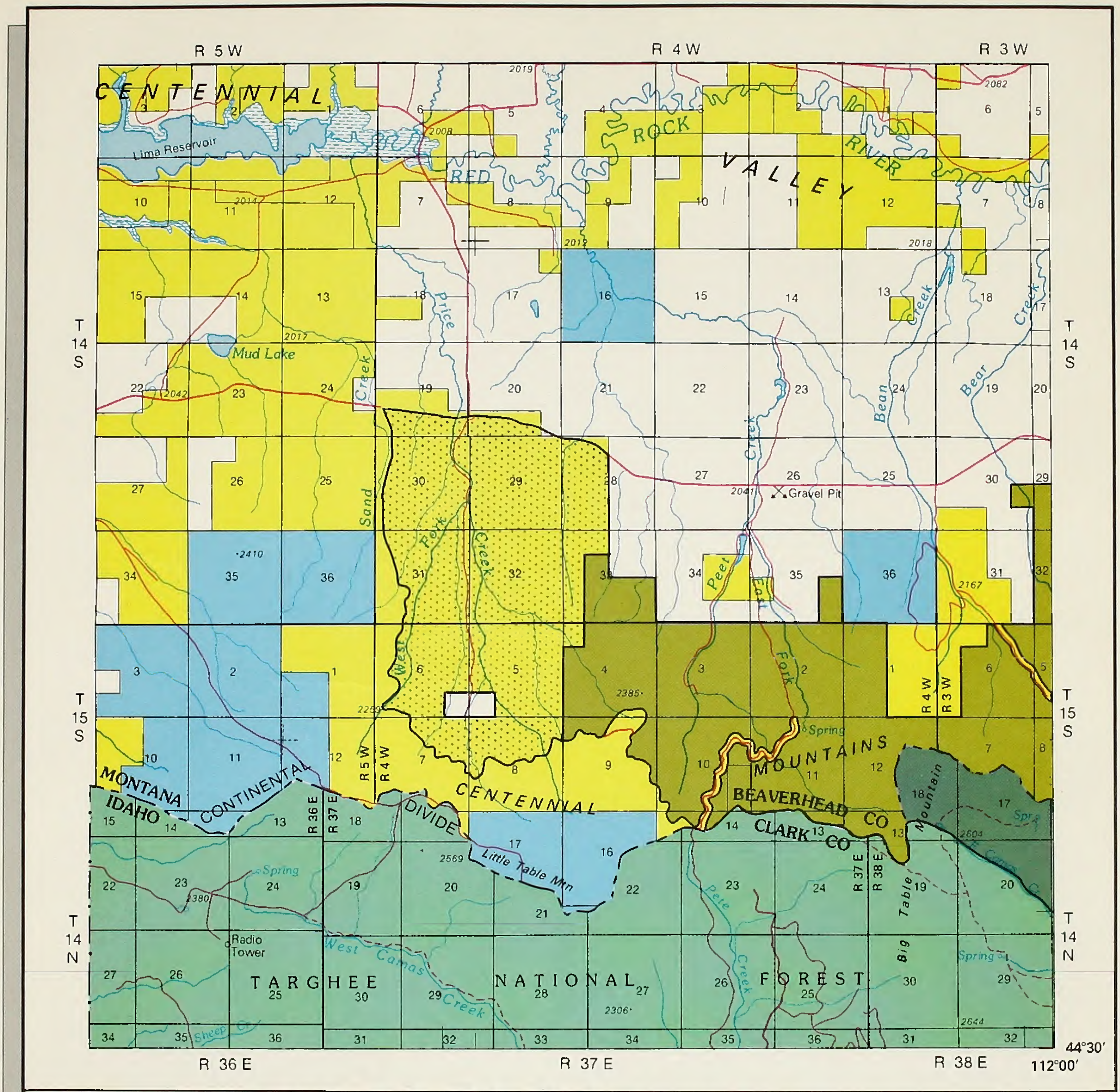

## Centennial Mountains Wilderness Study Area
## 1st Continental Exchange Inventory Unit

🟨 Public Lands

🟩 National Forest

🟦 State Lands

☐ Private Lands

▨ 1st Continental Exchange

— Major Road

— Minor Road

🟩 Wilderness Study Area

0 1 2 3 Miles
0 1 2 3 4 5 Kilometers
Scale

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